NEWS HOURS

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FILE 'HOME' ENTERED AT 07:20:48 ON 28 JAN 2003

=> fil reg
COST IN U.S. DOLLARS

SINCE FILE TOTAL ENTRY SESSION 0.21 0.21

FULL ESTIMATED COST

FILE 'REGISTRY' ENTERED AT 07:20:56 ON 28 JAN 2003 USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT. PLEASE SEE "HELP USAGETERMS" FOR DETAILS. COPYRIGHT (C) 2003 American Chemical Society (ACS)

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STRUCTURE FILE UPDATES: 26 JAN 2003 HIGHEST RN 481631-75-8 DICTIONARY FILE UPDATES: 26 JAN 2003 HIGHEST RN 481631-75-8

TSCA INFORMATION NOW CURRENT THROUGH MAY 20, 2002

Please note that search-term pricing does apply when conducting SmartSELECT searches.

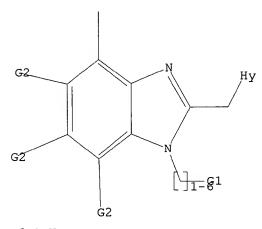
Crossover limits have been increased. See HELP CROSSOVER for details.

Experimental and calculated property data are now available. See HELP PROPERTIES for more information. See STNote 27, Searching Properties in the CAS Registry File, for complete details: http://www.cas.org/ONLINE/STN/STNOTES/stnotes27.pdf

=> Uploading 09994012.str

L1 STRUCTURE UPLOADED

=> d L1 HAS NO ANSWERS L1 STR 09994012 Page 3 01/28/2003



G1 C,H G2 C,H,X

Structure attributes must be viewed using STN Express query preparation.

=> s 11 SAMPLE SEARCH INITIATED 07:21:36 FILE 'REGISTRY' SAMPLE SCREEN SEARCH COMPLETED - 3263 TO ITERATE

30.6% PROCESSED 1000 ITERATIONS INCOMPLETE SEARCH (SYSTEM LIMIT EXCEEDED) SEARCH TIME: 00.00.01

50 ANSWERS

FULL FILE PROJECTIONS: ONLINE **COMPLETE**
BATCH **COMPLETE**

PROJECTED ITERATIONS: 61836 TO 68684
PROJECTED ANSWERS: 3018 TO 4682

L2 50 SEA SSS SAM L1

=> s l1 full FULL SEARCH INITIATED 07:21:41 FILE 'REGISTRY' FULL SCREEN SEARCH COMPLETED - 65441 TO ITERATE

100.0% PROCESSED 65441 ITERATIONS 3958 ANSWERS SEARCH TIME: 00.00.03

L3 3958 SEA SSS FUL L1

=> Uploading 09994012.str

L4 STRUCTURE UPLOADED

=> d L4 HAS NO ANSWERS L4 STR

$$G2$$
 N
 N
 $G2$
 N
 N
 $G2$
 $G3$
 $G4$
 $G5$
 $G5$

G1 C, H G2 C, H, X

Structure attributes must be viewed using STN Express query preparation.

=> s 14 subset=13 full FULL SUBSET SEARCH INITIATED 07:23:15 FILE 'REGISTRY' FULL SUBSET SCREEN SEARCH COMPLETED - 2095 TO ITERATE

100.0% PROCESSED 2095 ITERATIONS

134 ANSWERS

SEARCH TIME: 00.00.01

L5 134 SEA SUB=L3 SSS FUL L4

=> fil caplus
COST IN U.S. DOLLARS

SINCE FILE TOTAL ENTRY SESSION 184.25 184.46

FULL ESTIMATED COST

FILE 'CAPLUS' ENTERED AT 07:23:18 ON 28 JAN 2003 USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT. PLEASE SEE "HELP USAGETERMS" FOR DETAILS. COPYRIGHT (C) 2003 AMERICAN CHEMICAL SOCIETY (ACS)

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FILE COVERS 1907 - 28 Jan 2003 VOL 138 ISS 5 FILE LAST UPDATED: 27 Jan 2003 (20030127/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

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=> s 15 L6 32 L5

=> d ibib abs hitstr 1-32

09994012 Page 6 01/28/2003

L6 ANSWER 1 OF 32
ACCESSION NUMBER:
DOCUMENT NUMBER:
TITLE:
INVENTOR(5):
PATENT ASSIGNEE(S):
DOCUMENT TYPE:

CAPLUS COPYRIGHT 2003 ACS
2002:888718 CAPLUS
EARLY 34842
Benzimidazole compounds and antiviral uses thereof
Lackey, John William; Kinder, Oaniel S.; Tvermoes,
Nicolai A.
Trimeris, Inc., USA
CODEN: FIXXD2
Patent
Patent

DOCUMENT TYPE:

LANGUAGE: FAMILY ACC. NUM. COUNT: PATENT INFORMATION:

| INTERNI THE OPERATION. | | | | | |
|------------------------|-------------|-----------|----------------|-------------------|-----------|
| PATENT NO. | KIND OAT | E | APPLICATION | NO. OATE | |
| WO 2002092575 | ¥1 200 | 21121 | WO 2002-US14 | 1598 20020510 | |
| WU 2002092373 | AT AM AT | . AU. AZ. | BA. BB. BG. BF | R, BY, BZ, CA, CH | I, CN, |
| W: AE, AS, | CIL CZ. DE | DK. DM. | DZ. EC. EE. ES | 5, FI, GB, GO, GE | GH, |
| GM. HR. | HU. ID. IL | . IN. IS. | JP, KE, KG, KI | P, KR, KZ, LC, LK | t, LR, |
| LS. LT. | LU. LV. MA | . MD. MG. | MK, MN, MW, MD | K, MZ, NO, NZ, OM | 1, PH, |
| PI. PT | BO. BU. 50 | . SE. SG. | SI, SK, SL, To | J, TM, TN, TR, TT | , TZ, |
| 112 (16 | 117. VN. YU | . ZA. ZM. | ZW. AM. AZ. B | Y, KG, KZ, MD, RU | J, TJ, TM |
| pw. GH GM | KE. LS. MW | MZ. SD. | SL. SZ. TZ. UC | G, ZM, ZV, AT, BE | s, CH, |
| CY DE | DK. ES. FI | . FR. GB. | GR. IE, IT, L | U, MC, NL, PT, SE | S, TR, |
| BF. BJ. | CF. CG. CI | , CM, GA, | GN, GQ, GW, MI | L, MR, NE, SN, TE |), TG |
| PRIORITY APPLN. INFO | | | S 2001-2900381 | P P 20010511 | |
| OTHER SOURCE(S): | | 137:38484 | 12 | | |
| GI | | | | | |

- (CH₂) nYR1R2

Title compds. I [R1, R2 = H, (un)substituted alkyl, cycloalkyl, heterocyclic, aryl, heteroaryl; R3 = H, halo, (un)substituted alkyl, oh, alkoxy, aryl, heterocyclic, heteroaryl; R4-R7 = H, halo, (un)substituted alkyl, Oh, alkoxy, aryl, heterocyclic, heteroaryl; X = bond, (un)substituted alkylene, C:N, CO, P, S; Y = N, P, O, S; when Y = O, S, R2 is absent; n = 0-4] were prepd. for use as virucides that inhibit membrane fusion associd. events such as viral transmission, reduce viral load or otherwise treat viral infections, particularly that caused by Respiratory Syncytial Virus. Thus, I [R1 = cyclohexyl, R2 = CEM62, Y = N, X = CH2, R3 = 2-quinolinyl, R4-R7 = H] had 1050 of 5-16 .mu.g/mb. 475646-93-97 475646-93-97 475646-93-97 475646-93-97 475646-93-97 475646-93-97 475648-98-19

ANSWER 1 OF 32 CAPLUS COPYRIGHT 2003 ACS (Continued)
1H-Benzimidazole, 1-[(5-nitro-2-furanyl)methyl]-2-(1-piperidinylmethyl)-(9CI) (CA INDEX NAME)

475646-91-4 CAPLUS 1H-Benzimidazole, 1-[(2,4-dichlorophenyl)methyl]-2-(1-piperidinylmethyl)-(9CI) (CA INDEX NAME)

475646-92-5 CAPLUS 1H-Benzimidazole, 2-(1-piperidinylmethyl)-1-(2-pyridinylmethyl)- (9CI) (CA INDEX NAME)

475646-93-6 CAPLUS |H-Benzimidazole, 2-(1-piperidinylmethyl)-1-(3-pyridinylmethyl)- (9CI) (CA INDEX NAME)

ANSWER 1 OF 32 CAPLUS COPYRIGHT 2003 ACS (Continued)
475648-26-9F 475648-24-9F 475648-25-0F
475648-26-1F 475648-27-2F 475648-30-7F
475648-3-2F 475648-36-3F 475648-40-9F
RL: PAC (Pharmacological activity): SPN (Synthetic preparation): THU
(Therapeutic use): BIOL (Biological study): PREP (Preparation): USES
(Uses)
(prepn. of benzimidazole derivs. as virucides for treating Respiratory
Syncytial Virus infections)
475646-86-7 CAPLUS
(Quinoline, 2-[[2-(1-piperidinylmethyl)-lH-benzimidazol-l-yl]methyl]- (SCI)
(CA INDEX NAME)

475646-87-8 CAPLUS IH-Benzimadazole, 1-[(2-methyl-4-thiazolyl)methyl]-2-(1-piperidinylmethyl)-(9CI) (CA INDEX NAME)

475646-88-9 CAPLUS 1H-Benzimidazole, 1-{(1,1'-biphenyl]-4-ylmethyl)-2-(1-piperidinylmethyl)-[GCT] (CA IMDEX NAME)

475646-90-3 CAPLUS

ANSWER 1 OF 32 CAPLUS COPYRIGHT 2003 ACS (Continued)

475646-94-7 CAPLUS 1H-Benzimidazole, 2-(1-piperidinylmethyl)-1-(4-pyridinylmethyl)- (9CI) (CA INOEX NAME)

475646-95-8 CAPLUS IN-Benzindazole, 1-[(6-fluoro-4H-1,3-benzodioxin-8-yl)methyl]-2-(1-plperidinylmethyl)- (9CI) (CA INDEX NAME)

475646-96-9 CAPLUS
1H-Benzimidazole, 1-[[4-(methylsulfonyl)phenyl]methyl]-2-(1-piperidinylmethyl)- (9CI) (CA INDEX NAME)

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ANSWER 1 OF 32 CAPLUS COPYRIGHT 2003 ACS (Continued)

475646-97-0 CAPLUS 1H-Benzimidazole, 1-[[4-(methylthio)phenyl]methyl]-2-(1-piperidinylmethyl)-(9CI) (CA INDEX NAME)

475646-98-1 CAPLUS
1H-Benzimidazole, 2-(1-piperidinylmethyl)-1-{[2-(trifluoromethoxy)phenyl]methyl]- (9CI) (CA INDEX NAME)

475648-16-9 CAPLUS 1H-Benzimidazole, 1-(1H-benzimidazol-2-ylmethyl)-2-[(3,6-dihydro-1(2H)-pyridinyl)]methyl)- (9CI) (CA INDEX NAME)

475648-17-0 CAPLUS
4-Piperidinecarboxylic acid, 1-[[1-(lH-benzimidazol-2-ylmethyl)-lH-benzimidazol-2-yllmethyl]-, ethyl ester (9CI) (CA INDEX NAME)

L6 ANSWER 1 OF 32 CAPLUS COPYRIGHT 2003 ACS (Continued)

475648-25-0 CAPLUS 3-Piperidinemethanol, 1-[[1-(lH-benzimidazol-2-ylmethyl)-1H-benzimidazol-2-ylmethyl) (CA INDEX NAME)

475648-26-1 CAPLUS 2-Piperidinethanol, 1-[[1-(1H-benzimidazol-2-ylmethyl)-1H-benzimidazol-2-ylmethyl) (GA INDEX NAME)

475648-27-2 CAPLUS
Isoquinoline, 2-[[1-(1H-benzimidazol-2-ylmethyl]-1H-benzimidazol-2-yl]methyl]decahydro- [9CI) (CA INDEX NAME)

475648-30-7 CAPLUS

ANSWER 1 OF 32 CAPLUS COPYRIGHT 2003 ACS (Continued)

475648-19-2 CAPLUS IH-Benzinidazole,1-(1H-benzimidazol-2-ylmethyl)-2-[(3,5-dimethyl-1-piperidinyl)methyl)- (9CI) (CA INDEX NAME)

475648-20-5 CAPLUS
Isoquinoline, 2-[[1-(lH-benzimidazol-2-ylmethyl)-1H-benzimidazol-2-yl]methyl]-1,2,3,4-tetrahydro- (9CI) (CA INDEX NAME)

475648-24-9 CAPLUS 2-Piperidinemethanol, 1-[[1-(1H-benzimidazol-2-ylmethyl)-1H-benzimidazol-2-ylmethyl]- (9CI) (CA INDEX NAME)

ANSWER 1 OF 32 CAPLUS COPYRIGHT 2003 ACS (Continued) 1H-Benzimidazole, 1-(1H-benzimidazol-2-ylmethyl)-2-([4,4'-bipiperidin]-1-ylmethyl)- (9CI) (CA INDEX NAME)

4.5040-35-2 CAPLUS
1-Isoquinolineacetonitrile, 2-[[1-(1H-benzimidazol-2-ylmethyl)-1H-benzimidazol-2-yl]methyl]-1,2,3,4-tetrahydro-6,7-dimethoxy- (9CI) (CA INDEX NAME)

475648-36-3 CAPLUS 2,6-Piperidinedione, 1-[[1-(1H-benzimidazol-2-ylmethyl)-1H-benzimidazol-2-yl]methyl]- (9CI) (CA INDEX NAME)

475648-40-9 CAPLUS IR-Benzimidazol-2-ylmethyl)-2-[[4-(1-pyrrolidinyl)-1-piperidinyl]methyl]- (9CI) (CA INDEX NAME)

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ANSWER 1 OF 32 CAPLUS COPYRIGHT 2003 ACS (Continued)

475649-03-7P
RL: SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses) (prepn. of benzimidazole derivs. as viruoides for treating Respiratory Syncytial Virus infections)
475649-03-7 CAPLUS
3-Piperidinecarboxylic acid, 1-[[1-(1M-benzimidazol-2-ylmethyl)-1H-benzimidazol-2-yl]nethyl]-[1-(1H-benzimidazol-2-ylmethyl)-1H-benzimidazol-2-yl]methyl ester (9CI) (CA INOEX NAME)

REFERENCE COUNT:

TMERE ARE 10 CITED REFERENCES AVAILABLE FOR TMIS RECORD. ALL CITATIONS AVAILABLE IN TME RE FORMAT 10

ANSWER 2 OF 32 CAPLUS COPYRIGHT 2003 ACS
pyridinyl, etc.; Z2 = 0 or NHJ were prepd. Thus, BocZCH(ZIBr)CH2OM
(prepn, given) was aminated and the product condensed with 3,5-cl2CGH3NCO
to give BocZCH(Z2Br)CM2NMCONHCGH3Cl3-3,5 which was converted in 3 steps to
title compd. II. Data for biol. activity of title compds. were given. L6

RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (USes)

(Uses)
(prepn. of N-[biaryl(piperidinyl)ethyl]-N'-arylureas and analogs as melanin-concg. hormone receptor antagonists)
464158-82-5 CAPLUS
Urea, N-[2-(3'-cyane[1,1'-biphenyl]-4-yl)-2-[1-[(1-methyl-1M-benzimidazol-2-yl)methyl]-4-piperidinyl]ethyl]-N'-(3,5-dichlorophenyl)- (9CI) (CA INDEX NAME)

REFERENCE COUNT:

THERE ARE 3 CITEO REFERENCES AVAILABLE FOR TMIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT 3

L6 ANSWER 2 OF 32 CAPLUS COPYRIGHT 2003 ACS ACCESSION NUMBER: 2002:754356 CAPLUS DOCUMENT NUMBER: 137:29095 137: 27905
Preparation of N-[biary1(piperidiny1)ethy1]-N'arylureas and analogs as melanin-concentrating hormone
receptor antagonists
Clader, John W.; Josien, Mubert B.; Palani, Anandan;
Chan, Tin-Yau
Schering Corporation, USA
PCT Int. Appl., 129 pp.
COOEN: PIXXO2
Patent
FIRM1'sh inventor(s): PATENT ASSIGNEE(S): SOURCE:

DOCUMENT TYPE: LANGUAGE: FAMILY ACC. NUM. COUNT: PATENT INFORMATION: English

PATENT NO. KIND DATE APPLICATION NO. 0ATE

WO 2002076947 Al 20021003 WO 2002-US8338 20020320

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CZ, DE, OX, DM, DZ, EC, EE, ES, FI, GB, GG, GE, HR, HU, 10, IL, IN, IS, JP, KG, KR, KZ, LC, LK, LR, LT, LU, LV, MA, MG, MG, MK, MM, MX, MZ, NO, NZ, PH, PL, PT, RO, RU, SE, SG, S1, S1, TJ, TM, TN, TR, TT, TZ, UA, UZ, VN, YU, ZA, ZM, AM, AZ, BY, KG, KZ, MO, RU, TJ, TM

RV: GH, GM, KE, LS, MY, HZ, SD, SL, SZ, TZ, UG, 24, ZW, AT, BE, CH, CT, DE, OK, ES, FI, FR, BB, GR, IE, IT, LU, MC, NL, PT, SE, TB, BF, BJ, CF, CG, CT, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. 1NFO.:

OTHER SOURCE(S):

HARPAT 137:279095

Title compds., e.g., RZCH(Z1R1)CH2Z2CONHR2 (Z = piperidine-1,4-diyl, Z1 = 1,4-phenylene)[I: R = M, (cyclo)alkyl, alkylsulfonyl, etc.; R1 = (un) substituted Ph or 3-pyridinyl; R2 = halophenyl, $\{un\}$ substituted

II

L6 ANSWER 3 OF 32 CAPLUS COPYRIGHT 2003 ACS ACCESSION NUMBER: 2002:556140 CAPLU© COCUMENT NUMBER: 137:12*** LUS COPYRIGHT 2003 ACS
2002:556140 CAPLUS
137:125159
Preparation and antiviral activity of heterocyclic
substituted 2-methylbenzimidazole antiviral agents
Yu, Kuo-Long, Civiello, Rita L.; Combrink, Keith D.;
Gulgeze, Matice Belgin; Sin, Ny; Wang, Xiangdong;
Meanwell, Nicholas; Venables, Brian Lee; Zhang, Yi;
Pearce, Bradley C.; Yin, Zhiwei; Thuring, Jan Willem
USA
U.S. Pat. Appl. Publ., 89 pp.
CODEN: USXXCO
Patent
English INVENTOR(S):

PATENT ASSIGNEE (S): SOURCE:

OOCUMENT TYPE: LANGUAGE: FAMILY ACC. NUM. COUNT: PATENT INFORMATION: English

0ATE -----20020725 APPLICATION NO. DATE PATENT NO. KIND

The title compds. [I; Rl = (CRaRb)nX; Ra, Rb = independently M, Cl-6 (un) substituted alkyl; X = M, Cl-6 (un) substituted alkyl; N = 1-6; R2, R5 = independently M or halogen; R3, R4 = independently M, halogen, Cl-6 (un) substituted alkyl; Q = heterocyclic group!, useful in the treatment of viral infections, more particularly, for the treatment of respiratory syncytial virus infection, were prepd. E.g., a four-step synthesis of II, starting with 2-(chloromethyl) benzimidazole, was given. The antiviral activity of these compds against respiratory syncytial virus (RSV) was detd. in HEp-2 (ATCC CCL 23) cells. The title compds. I, disclosed herein, show antiviral activity with ECSOs between 50 .mu.H and 0.001 .mu.H. mu. M. 443987-39-1P 443987-43-7P 443987-45-9P 443987-47-1P

RL: PAC (Pharmacological activity); RCT (Reactant); SPN (Synthetic

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ANSWER 3 OF 32 CAPLUS COPYRIGHT 2003 ACS (Continued) preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses) (prepn. and use of heterocyclic substituted 2-methyl-benzimidazole antiviral agents); 44387-39-1 CAPLUS 4-Quinolinecarboxylic acid, 1-[[1-(4-fluorobutyl)-1H-benzimidazol-2-yl]methyl)-1,2-dihydro-3-hydroxy-2-oxo-, ethyl ester (9CI) (CA INDEX NAME)

443987-43-7 CAPLUS 2(1H)-Quinolinone, 3-bromo-1-[[1-(4-fluorobutyl)-1H-benzimidazol-2-yl]methyl]- (9CI) (CA INDEX NAME)

443987-45-9 CAPLUS 2(IR)-Quinolinone, 3-ethenyl-1-[[1-(4-fluorobutyl)-lH-benzimidazol-2-yl]methyl]- (9CI) (CA INDEX NAME)

ANSWER 3 OF 32 CAPLUS COPYRIGHT 2003 ACS (Continued)

443987-37-9 CAPLUS
3-Quinolinecatboxylic acid, 1-[[1-[2-(dimethylamino)ethyl]-1H-benzimidazol-2-yl]methyl]-8-fluoro-1,4-dihydro-4-oxo-, ethyl ester (9CI) (CA INDEX NAME)

443987-38-0 CAPLUS
3-Quinolinecarboxylic acid, 1-[[1-(4-fluorobutyl)-1H-benzimidazol-2-yl]methyl]-1,4-dihydro-4-oxo-, ethyl ester (9CI) (CA INDEX NAME)

443987-40-4 CAPLUS
4-Quinolinecarboxylic acid, l-[[1-(4-fluorobutyl)-1H-benzimidazol-2-y]methyl]-1,2-dihydro-3-hydroxy-2-oxo- (SCI) (CA INDEX NAME)

L6 ANSWER 3 OF 32 CAPLUS COPYRIGHT 2003 ACS (Continued)

443987-47-1 CAPKUS
2(1H)-Quinolinone, 3-(1-ethoxyethenyl)-1-[[1-(4-fluorobutyl)-1H-benzimidazol-2-yl]methyl]- (9CI) (CA INDEX NAME)

443987-36-8P 443987-37-9P 443987-28-0P
443987-40-4P 443987-41-5P 443987-42-6P
443987-44-8P 443987-46-0P 443987-48-2P
443987-44-8P 443987-46-0P 443987-48-2P
443987-46-8P 443987-46-0P 443987-48-2P
(Therapeutic use); BIOL (Biological study); PREP (Preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(prepn. and use of heterocyclic substituted 2-methyl-benzimidazole antiviral agents)
443987-36-8 CAPLUS
3-Quinolinecarboxylic acid, 8-fluoro-1,4-dihydro-1-[[1-(3-methylbutyl)-1H-benzimidazol-2-yl]methyl]-4-oxo-, ethyl ester (9CI) (CA INDEX NAME)

ANSWER 3 OF 32 CAPLUS COPYRIGHT 2003 ACS (Continued)

443987-41-5 CAPLUS
4-Quinolinecarboxylic acid, 1-[[1-(4-fluorobutyl)-IH-benzimidazol-2-yl]methyl]-1,2-dihydro-3-methoxy-2-oxo-, ethyl ester (9CI) (CA INDEX NAME)

443987-42-6 CAPLUS 2(1H)-Quinolinone, 1-[[1-(4-fluorobuty1)-1H-benzimidszol-2-y1]methy1]-(9CI) (CA INDEX NAME)

443987-44-8 CAPLUS 2(1H)-Quinolinone, 1-[[1-(4-fluorobutyl)-1H-benzimidazol-2-yl]methyl]-4-

09994012 Page 10 01/28/2003

ANSWER 3 OF 32 CAPLUS COPYRIGHT 2003 ACS methoxy- (9CI) (CA INDEX NAME) (Continued)

443987-46-0 CAPLUS
2(1H)-Quinolinone, 3-ethyl-1-[{1-(4-fluorobutyl)-1H-benzimidazol-2-y1]methyl}- (9CI) (CA INDEX NAME)

443987-48-2 CAPLUS 2(1H)-Quinolinome, 3-acetyl-1-[(1-(4-fluorobutyl)-1H-benzimidazol-2-yl]methyl]- (9CI) (CA INDEX NAME)

ANSWER 4 OF 32 CAPLUS COPYRIGHT 2003 ACS (Continued)

$${}_{R^{1}-X} \underbrace{\qquad \qquad \bigvee_{N-}^{N} \bigvee_{T-(N)_{s}}^{R^{47}} (\operatorname{CH}_{2})_{n} - (\operatorname{CHY})_{q}^{-} (\operatorname{CH}_{2})_{\epsilon}^{-} - \operatorname{R}^{3}}_{\Gamma}$$

Title compds. I [q, s, t = 0 - 1; n, r = 0 - 5; m, p = 0 - 2; K = CH, C(O), O, S, S(O), S(O), n: provided that when m and p are both 1 then X is not CH; Y = NRR2, OH; T = C(O), C(S), S(O), CH2; Rl = H, alkyl, aryl, heterocyclyl; R2, R47 = H, alkyl, aryl-alkyl, Co-alkyl; R3 - alkyl, alkenyl, cycloalkyl, cycloalkenyl, aryl, heterocyclyl; R3 - alkyl, thioaryl, thioar

L6 ANSWER 4 OF 32 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER:
DOCUMENT NUMBER:
135:318419
ITITLE:
INVENTOR(S):
Synthesis of substituted bipiperidines and their use
as H1 antagonists
Lawrence, Louiser Rigby, Aaron; Sanganee, Hitesh;
Springthorpe, Brian
Astraceneca AB, Swed.
PATENT ASSIGNEE(S):
SOURCE:
COCCUMENT TYPE:
LANGUAGE:
PATENT ACC. NUM. COUNT:
English
English LANGUAGE: FAMILY ACC. NUM. COUNT: PATENT INFORMATION: PATENT NO. KIND DATE APPLICATION NO. DATE OTHER SOURCE(5):

MARPAT 135:318419

ANSWER 4 OF 32 CAPLUS COPYRIGHT 2003 ACS (Continued)

REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

09994012 Page 11 01/28/2003

L6 ANSWER 5 OF 32 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER:
DOCUMENT NUMBER:
1151:46203
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DOCUMENT TYPE: LANGUAGE: FAMILY ACC. NUM. COUNT: PATENT INFORMATION:

| PAT | ENT | NO. | | KI | ND | DATE | | | A | PPLI | CATI | ON NO | ٥. | DATE | | | |
|-----|------|-------|-------|-----|-----|------|------|-----|-----|-------|------|-------|-----|------|------|-----|-----|
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| wo | 2001 | 10402 | 227 | A | 1 | 2001 | 0607 | | w | 0 20 | 00-J | P851 | 7 | 2000 | 1201 | | |
| | w : | AE. | AG, | AL. | AM. | AT, | AU, | AZ, | BA, | BB, | BG, | BR, | BY, | ΒZ, | CA, | CH, | CN, |
| | | CB | ÇU, | CZ. | OE. | ox. | DM. | DZ. | EE. | ES. | FI. | GB, | GO, | GE, | GH, | GM, | HR, |
| | | HII | 10, | T 1 | IN. | 15. | JP. | KE. | KG. | KP. | KR. | KZ. | LC. | LK, | LR, | LS, | LT, |
| | | 1.11 | LV, | MA. | MO. | MG. | MK. | MN. | MW. | MX. | MZ. | NO. | NZ. | PL. | PT, | RO, | RU, |
| | | SD. | SE, | SG. | SI. | SK. | SL. | TJ. | TM. | TR. | TT. | TZ. | UA. | UG. | US, | UZ, | VN, |
| | | VII | ZA, | 2W | AM. | A7. | BY. | KG. | KZ. | MO. | RU. | TJ. | TM | | | | |
| | DW. | . Gu | GM, | VE, | 1.5 | MW, | M2 | 50. | SI. | 57. | TZ. | UG. | ZW. | AT. | BE. | CH, | CY, |
| | V. | OF. | OK, | ES, | ΕT. | FR. | GB. | GR. | IE. | TT. | LU. | MC. | NL. | PT. | SE. | TR. | BF. |
| | | 0.5 | CF, | CG, | CT, | CH | GA, | GN | GW. | MI. | MR. | NE. | SN. | TO. | TG | | |
| | ~~~ | 1010 | 506 | ٠٠, | ٠., | 2001 | 0612 | ٠, | ٠-, | 11 20 | 01_1 | 6506 | , | 2000 | 1201 | | |
| ΑU | 200. | TOTES | 906 | A | o . | 2001 | 0012 | | | 0 20 | 01-1 | 0000 | _ | 2000 | | | |
| EP | 1236 | 6726 | | A | 1 | 2002 | 0904 | | E | P 20 | 00-9 | 7905 | 0 | 2000 | 1201 | | |
| | R: | AT, | BE, | CH, | DE, | DK, | ES, | FR. | GB, | GR, | ΙT, | LI, | LU, | NL, | SE, | MC, | PT, |
| | | IE. | , SI, | LT, | LV, | FI, | RO, | MK, | CY, | AL, | TR | | | | | | |
| NO | 200 | 2002 | 609 | A | | 2002 | 0726 | | N | 0 20 | 02-2 | 609 | | 2002 | 0531 | | |
| | | | THEO | | | | | | | | | | | | | | |

PRIORITY APPLN. INFO.: JP 1999-344967 JP 2000-18673 JP 2000-27968 JP 2000-147882 WO 2000-JP8517 20000127 20000204 20000519 20001201

OTHER SOURCE(S): MARPAT 135:46203

L6 ANSWER 5 OF 32 CAPLUS COPYRIGHT 2003 ACS (Continued)

CM 2

CRN 64-19-7 CMF C2 H4 O2

о || но-с-снз

343836-00-0 CAPLWS
1,4,9-Triazaspiro[5.5]undecane-2,5-dione, 9-[(1-methyl-1H-benzimidazol-2-yl)nethyl]-3-(2-methylpropyl)-1-propyl-, monoacetate (9CI) (CA INDEX NAME)

CH 1

CRN 343835-99-4 CHF C24 H35 N5 O2

2

CRN 64-19-7 CMF C2 H4 O2

343836-84-0 CAPLUS 1,4,9-Triazappiro[5,5]undecane-2,5-dione, 1-butyl-9-[(1-methyl-1H-benimidazol-2-yl)methyl]-3-(2-methylpropyl)-, monoacetate (9Cl) (CA

L6 ANSWER 5 OF 32 CAPLUS COPYRIGHT 2003 ACS (Continued)

СМ 1

CRN 343835-20-1 CMF C23 H33 N5 O2

ANSWER 5 OF 32 CAPLUS COPYRIGHT 2003 ACS (Continued)

CRN 343836-83-9 CHF C25 H37 N5 O2

2

CRN 64-19-7 CMF C2 H4 O2

343839-93-0 CAPLUS
1,4,9-Triazaspiro[5.5]undecane-2,5-dione, 3-(cyclohexylmethyl)-9-[(1-methyl)-1H-benzimidazol-2-yl)methyl]-1-propyl-, monoacetate (9CI) (CA INDEX NAME)

CM 1

CRN 343839-92-9 CMF C27 H39 N5 O2

CM 2

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ANSWER 5 OF 32 CAPLUS COPYRIGHT 2003 ACS

 $343840-80-2 \quad CAPLUS \\ 1,4,9-frizzaspiro[5.5] undecane-2,5-dione, 1-butyl-3-(cyclohexylmethyl)-9-(1-methyl-1H-benzimidazol-2-yl)methyl]-, monoacetate (9CI) (CA INDEX NAME)$

CM I

CRN 343840-79-9 CMF C28 H41 N5 O2

CM 2

CRN 64-19-7 CMF C2 H4 O2

343841-73-6 CAPLUS
1,4,9-Triazaspiro[5.5]undecane-2,5-dione, 3-(cyclohexylmethyl)-1-(2-methoxyethyl)-9-((1-methyl-1H-benzimidazol-2-yl)methyl)-, monoacetate (9C1) (CA INDEX NAME)

CM 1

CRN 343841-72-5 CMF C27 H39 N5 O3

L6 ANSWER 6 OF 32 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER:
DOULMENT NUMBER:
134:340509
Preparation of 8-azabicyclo[3.2.1]octane NMDA/NR2B
antagonists
Thompson, Wayne; Claremon, David A., Munson, Peter M.,
Phillips, Brian
PATENT ASSIGNEE(S):
Berck + Co., Inc., USA
PCT Int. Appl., 77 pp.
CODEN: PIXXD2
PATENT INFORMATION:
English
PATENT INFORMATION:
1

FAMILY ACC. NUM. COUNT: PATENT INFORMATION:

APPLICATION NO. DATE KIND DATE PATENT NO.

OTHER SOURCE(S):

The title compds., commonly known as tropanes, (I) [wherein Rl = (un) substituted 2-benzimidazole, imidazole, imidazopyridine, indole,

L6 ANSWER 5 OF 32 CAPLUS COPYRIGHT 2003 ACS (Continued)

343842-66-0 CAPLUS 1,4,9-Triazaspiro(5.5) undecane-2,5-dione, 3-(cyclohexylmethyl)-9-[(1-methyl-lH-benrimidazol-2-yl) methyl]-1-(phenylmethyl)-, monoacetate (9CI) (CA INDEX NAME)

CRN 343842-65-9 CMF C31 H39 N5 O2

CM 2

REFERENCE COUNT:

THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

ANSWER 6 OF 32 CAPLUS COPYRIGHT 2D03 ACS (Continued) quinazoline, purine, bencoxazolone, or phenol; R2 = Ph, optionally substituted with 1-5 substituents selected from C1, F, Br, alkyl, CF3, OH, or CO2H; L1 and L2 = independently (cyclo) alkyl, alkenyl, alkynyl, alkony, aminoalkyl, hydroxyalkyl, or (amino)achonyl; X = OH, NHZ; (di) alkylamino, alkyl, ester, carbamate, carbonate, or ether! were prepd. as effective NMDA NRZB glutamate receptor antagonists. For example, addn. of di-tt. 4-chlorobenzylphosphonate to N-carbethoxy-4-tropinone to give the benzylidene, redn. using Pt/C, N-deprotection using BHr in AcOM, and reductive addn. of 1-(trimethylsilylethoxymethyl)-lH-benzimidazole-2-carbaldehyde (2-step prepn. given) using NBB(OAC) in ClcRZHZCl afforded exo-II. Exptl. protocols for assessing the inhibition of NRIA/2B NMDA receptor activation (FiltPR assay) and detg, the apparent dissocn. consts. against the human NRIA/NRZB receptor (binding assay) are given (no data). I are useful for releving pain and treating migraine, depression, anxiety, achizophrenia, Parkinson's disease, or stroke (no data). 338733-48-F9 338733-48-59 338733-53-29 338733-53-68 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent) (intermediate; prepn. of (benzimidazolylalkyl)tropane NMDA/NRZB antagonists for treatment of pain) 338733-44-1 CAPLUS STORMAN (pain) 1-H-benzimidazol-2-yl]methyl]-, (IR, 2R, 3S, 5S)-rel- (9CI) (CA INDEX NAME)

338733-48-5 CAPLUS
8-Azabicyclo[3.2.1] octan-2-o1, 3-(phenylmethyl)-8-[[1-[[2-(trimethylsilyl)ethoxy]nethyl]-1H-benzimidazol-2-yl]methyl]-, (LR,25,35,55)-cel- [9CI) (CA INDEX NAME)

09994012 Page 13 01/28/2003

ANSWER 6 OF 32 CAPLUS COPYRIGHT 2003 ACS

338733-53-2 CAPJUS
8-Azabicyclo[3.2.1] octane, 2-methoxy-3-(phenylmethyl)-8-[[1-[[2-(trimethylsily1)ethoxy]methyl]-1H-benzimidazol-2-yl]methyl]-,
[IR, 2R, 3S, 5S)-rel (9CI) (CA INDEX NAME)

338733-57-6 CAPLUS
8-Azabicyclo[3.2.1]octane, 2-methoxy-3-(phenylmethyl)-8-[[1-[[2-(trimethyl3-ilyl)ethoxy]methyl]-1H-benzımidazol-2-yl]methyl]-,
(1R, 2S, 3S, 5S)-rel-(9CI) (CA INOEX NAME)

REFERENCE COUNT:

THERE ARE 1 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

ANSWER 7 OF 32 CAPLUS COPYRIGHT 2003 ACS (Continued) 1H-Benzimidazole, 2-[[3,6-dihydro-4-[(1E)-2-phenyletheny1]-1(2H)-pyridinyl]methyl]-1-methyl- (9CI) (CA INDEX NAME)

Double bond geometry as shown.

L6 ANSWER 7 OF 32 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER:
DOCUMENT NUMBER:
134:320873
Method to treat pain and other conditions using benzimidazole NMOA/NRZB antagonists
NUMENTOR(S):
PATENT ASSIGNEE(S):
SOURCE:
COOKIN FLYNCE
DOCUMENT TYPE:
LANGUAGE:
FAMILY ACC. NUM. COUNT:
English
FAMILY ACC. NUM. COUNT:
FAMILY A LANGUAGE: FAMILY ACC. NUM. COUNT: PATENT INFORMATION:

Double bond geometry as shown.

336608-46-9 CAPLUS

L6 ANSWER 8 OF 32 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 2001:12444 CAPLUS
134:86248 Preparation of benzimidazoles as respiratory syncytial vuls replication inhibitors.

INVENTOR(S): Jamssens, Frans Eduard; Neersman, Kathleen Petrus Marie-Jose; Sommen, Francois Marias Guillemont, Jerome Emile Georges; Lacrampe, Jean Fernand Armand; Andries, Koenraad Jozef Lodewijk Marcel Jamssen Pharmaceutica N.V., Belg.
PATENT ASSIGNEE(S): PATENT TYPE: Patent LANGUAGE: PRIXXD2

DOCUMENT TYPE: Patent Emile Georges: Lacrampe, Jean Fernand Armand; Andries, Koenraad Jozef Lodewijk Marcel Jamssen Pharmaceutica N.V., Belg.
PCDEN: PIXXD2

DOCUMENT TYPE: Patent LANGUAGE: English

DOCUMENT TYPE: LANGUAGE: FAMILY ACC. NUM. COUNT: PATENT INFORMATION: English

APPLICATION NO. DATE
WO 2000-EP5676 20000 PATENT NO. KIND DATE W0 2001000611 A1 20010104 W0 2000-FF5675 20000620

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, LV, MA, MD, MG, MK, MM, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SI, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DX, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CFF, CG, CI, CM, GA, GW, GW, LM, MR, NK, SN, TD, TG

BR 200012051 A 20020417 BB 20000-12054 20000620

ER: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO

NO 200106536 A 201202042 EP 1094052 A 20000620

PRIORITY APPLN. INFO: NO 2DD1-6368 20011227 EP 1999-22087 A 19990628 EP 2000-20047 A 20000211 WO 2000-EP5676 W 20000620 MARPAT 134:86248

OTHER SOURCE(S):

09994012 Page 14 01/28/2003

ANSWER 8 OF 32 CAPLUS COPYRIGHT 2003 ACS (Continued) dioxepino[5,6-c]pyridin-2-yl]methyl]-IH-benzimidazol-2-yl]amino]piperidine. Tested I inhibited respiratory syncytial virus replication with ICSO = 0.00013-2.5119 .mu.M. 317847-67-9

RI: RCT (Reactant): RACT (Reactant or reagent) (preph. of benzimidazoles as respiratory syncytial virus replication inhibitors) 317847-67-9 CAPUMS

317847-52-2P 317847-53-3P
RL: RCT (Reactant): SPN (Synthetic preparation): PREP (Preparation): RACT (Reactant or reagent) (prepn. of benzimidazoles as respiratory syncytial virus replication IT

(prepr. of benchmarked as topytotecty types of inhibitors)
317847-52-2 CAPLUS
4-Piperidinone, 1-[[1-[(6-methyl-2-pyridinyl)methyl]-IH-benzimidazol-2-yl]methyl]- (9CI) (CA INDEX NAME)

317847-53-3 CAPLUS
1,2-Ethanediamine, N'-[1-[[1-[(6-methyl-2-pyridinyl)methyl]-1H-benzimidazol-2-yl]methyl]-4-piperidinyl]-N,N-bis(phenylmethyl)- (9CI) (CA INOEX NAME)

L6 ANSWER 9 OF 32 CAPLUS COPYRIGHT 2003 ACS ACCESSION NUMBER: 1997:127364 CAPLUS DOCUMENT NUMBER: 126:171592

TITLE:

126:171592
Preparation and formulation of imidazolidine and thiazolidine derivatives as allergy inhibitors Tagami, Yoshhirtor, Yamaguchi, Toshirco Kubo, Junichi; Shimozono, Jujii Yonemura, Keijii Mukai, Mizue Hisamitsu Pharmaceutical Co, Japan Jpn. Kokai Tokkyo Koho, 25 pp.
CODEN: JKCKAF
Patent INVENTOR(S):

PATENT ASSIGNEE(S): SOURCE:

DOCUMENT TYPE: LANGUAGE: FAMILY ACC. NUM. COUNT: PATENT INFORMATION:

JP 09003067 A2 19970107
PRICRITY APPLN. INFO::
OTHER SOURCE(S): MARPAT 126-7 APPLICATION NO. DATE JP 1995-173009 19950616 JP 1995-173009

MARPAT 126:171592

$$R^{1}R^{2}CH (OH)_{m} (CH_{2})_{n}N$$
 $CH = \bigvee_{NH}^{Y}$

The title compds. I [R1 = H, alky1, etc.; R2 = (un)substituted Ph, etc.; m = 0 or 1; n = 0 or 3; Y = S, etc.; Z = S, O, etc.] are prepd. I are effective against both type I and IV allergies. The title compds. at 10 mg/kg orally gave 4.1% to 78.5% inhibition of type I allergic reaction in rats. 186455-93-69 186455-94-79 186455-95-69 186455-95-69 186455-97-09 186455-01-99 186455-92-186456-03-19 186456-04-29 186456-03-19 186456-04-29 186456-05-19 186456-03-19 186456-01-09

Inhibitors | 16455-93-6 CAPLUS | 4-Thiszolidinone, 5-[[1-[[1-(phenylmethyl)-1H-benzimidszol-2-yl]methyl]-4-piperidinyl]methylenej-2-thioxo- (9CI) (CA INDEX NAME)

ANSWER 8 OF 32 CAPLUS COPYRIGHT 2003 ACS (Continued)

NH-CH2-CH2-N-CH2-Ph

THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT REFERENCE COUNT:

ANSWER 9 OF 32 CAPLUS COPYRIGHT 2003 ACS

186455-94-7 CAPLUS
4H-Imidazol-4-one, 2-amino-1,5-dihydro-1-methyl-5-[[1-[[1-(phenylmethyl)-1H-benzımidazol-2-y1]methyl]-4-piperidinyl]methylene]- (9CI) (CA INDEX NAME)

186455-95-8 CAPLUS
4-Thiazolidinone, 5-[[1-[[1-(2-phenylethyl)-1H-benzimidazol-2-yl]methyl]-4piperidinyl]methylenej-2-thioxo- (9CI) (CA INDEX NAME)

186455-96-9 CAPLUS
4H-Imidazol-4-one, 2-amino-1,5-dihydro-1-methyl-5-[[1-[[1-(2-phenylethyl)-1H-benzimdazol-2-yl]methyl]-4-piperidinyl]methylenel- (9CI) (CA INDEX

I86455-97-0 CAPLUS
4-Imidazolidinone, 5-[[1-[[1-(2-phenylethyl)-1H-benzimidazol-2-yl]methyl]-

09994012 Page 15 01/28/2003

L6 ANSWER 9 OF 32 CAPLUS COPYRIGHT 2003 ACS (Continued) 4-piperidinyl]methylene]-2-thioxo-(9CI) (CA INDEX NAME)

RN 186455-98-1 CAPLUS
CN 4-Thiazolidinone, 5-[[1-[[1-[(4-chlorophenyl)methyl]-lH-benzimidazol-2-yl]methyl]-4-piperidinyl]methylene]-2-thioxo- (9C1) (CA INDEX NAME)

RN 186455-99-2 CAPLUS
CN 4H-Inidazol-4-one, 2-amino-5-[[1-[[1-[(4-chlorophenyl)methyl]-lH-benzimidazol-2-yl]methyl]-4-piperidinyl]methylene]-1,5-dihydro-1-methyl-(SCI) (CA INDEX NAME)

RN 186456-00-8 CAPLUS
CN 4-Thiazolidinone, 5-[[1-[[1-[(4-methoxyphenyl)methyl]-1H-benzimidazol-2-yl]methyl]-4-piperidinyl]methylene]-2-thioxo- (9CI) (CA INDEX NAME)

L6 ANSWER 9 OF 32 CAPLUS COPYRIGHT 2003 ACS (Continued (CA INDEX NAME)

RN 186456-D4-2 CAPLUS
CN 4-Thiazolidinone, 5-[[1-[(1-((4-fluorophenyl)methyl]-lH-benzimidazol-2-yl]methyl]-epiperidinyl]methylene]-2-thioxo-(9C1) (CA INDEX NAME)

RN 186456-05-3 CAPLUS CN 4H-Imidazol-4-one, 2-amino-5-[[1-[[1-[(4-fluorophenyl)methyl]-1H-benzimidazol-2-ylimethyl]-4-piperidinyl]methylene]-1,5-dihydro-1-methyl-(SCI) (CA INDEX NAME)

RN 186456-06-4 CAPLUS
CN 4-Imidazolidinome, 5-[[1-[[1-[(4-fluorophenyl)methyl]-lH-benzimidazol-2-yl]methyl]-4-piperidinyl]methylene]-2-thioxo- (9CI) (CA INDEX NAME)

L6 ANSWER 9 OF 32 CAPLUS COPYRIGHT 2003 ACS (Continued)

RN 186456-01-9 CAPLUS
CN 4H-Imidazol-4-one, 2-amino-1,5-dihydro-5-[[]-[[]-[(4-methoxyphenyl)]methyl]H-benzimidazol-2-yl]methyl]-4-piperidinyl]methylene]-1-methyl- (9CI) (CA
INDEX NAME)

RN 186456-02-0 CAPLUS
CN 4-Imidazolidinone, 5-[[1-[[1-[(4-methoxyphenyl)methyl]-1H-benzimidazol-2-yl]methyl]-4-piperidinyl]methylene]-2-thioxo- (9CI) (CA INDEX NAME)

RN 186456-03-1 CAPLUS Guaridine, [5-[[1-[(4-fluorophenyl)methyl]-lH-benzimidazol-2-yl]methyl]-4-paridinyl]methylene]-4,5-dihydro-4-oxo-2-thiazolyl]- (9CI)

L6 ANSWER 9 OF 32 CAPLUS COPYRIGHT 2DD3 ACS (Continued)

RN 186456-07-5 CAPLUS
4-Thiazolidinone, 5-[[1-[[1-(2-ethoxyethyl)-1H-benzimidazol-2-yl]methyl]-4piperidinyl]methylene]-2-thioxo-(9CI) (CA INDEX NAME)

$$\begin{array}{c|c} & & & \\ & & & \\$$

RN 186456-08-6 CAPLUS
CN 4H-Imidazol-4-one, 2-amino-5-[[1-[[1-(2-ethoxyethyl)-1H-benzimidazol-2-y]]methyl]-4-piperidinyl]methylene)-1,5-dihydro-1-methyl- (9CI) (CA INDEX NAME)

RN 186456-09-7 CAPLUS
CN 4-Imidazolidinone, 5-[[1-[[1-(2-ethoxyethyl)-1H-benzimidazol-2-yl]methyl]4-piperidinyl]methylene]-2-thioxo-(9CI) (CA INDEX NAME)

09994012 Page 16 01/28/2003

ANSWER 9 OF 32 CAPLUS COPYRIGHT 2003 ACS (Continued)
186456-10-0 CAPLUS
4-Thiazolidinone, 5-[(1-[(1-ethyl-lH-benzimidazol-2-y1)methyl]-4piperidinyl]methylene]-2-thioxo- (9CI) (CA INDEX NAME)

186456-11-1 CAPLUS
4H-Imidazol-4-one, 2-amino-5-[[1-[(1-ethyl-1H-benzimidazol-2-yl)methyl]-4-piperidinyl]methylenej-1,5-dihydro-1-methyl- (9CI) (CA INDEX NAME)

186456-12-2 CAPLUS
4-Imidazolidinone, 5-[[1-[(1-ethyl-1H-benzimidazol-2-yl)methyl]-4-piperidinyl]methylene]-2-thioxo- (9CI) (CA INDEX NAME)

ΙT

RE456-14-4P 186456-15-5P 186456-16-6P
RL: RCT (Reactant): SPN (Synthetic preparation): PREP (Preparation): RACT (Reactant or reagent)
(prepn. of imidazolidine and thiazolidine derivs. as allergy inhibitors)
186456-14-4 CAPLUS
4-Piperidinecarboxylic acid, 1-[[1-((4-chlorophenyl)methyl]-1H-benzimidazol-2-yl]methyl]-, ethyl ester (9CI) (CA INDEX NAME)

186456-15-5 CAPLUS 4-Piperidinemethanol, 1-[[1-[(4-chlorophenyl)methyl]-1H-benzimidazol-2-yl]methyl]- (9CI) (CA INDEX NAME)

ANSWER 9 OF 32 CAPLUS COPYRIGHT 2003 ACS

186456-16-6 CAPLUS
4-Piperidinecariboxal (dehydo, 1-[[1-[(4-chlorophenyl)methyl]-1H-benzimidazol-2-yl]methyl]- (9CI [KDEX NAME])

(Continued)

L6 ANSWER 10 OF 32 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 1997:113345 CAPLUS
DOCUMENT NUMBER: 126:171594
ITITLE: 126:171594
Preparation of nitrogen-containing heterocyclyl compounds as antiallergic agents Tagani, Yoshihiro; Yamaguchi, Toshiro; Kubo, Junichi, Shimozono, Juji; Yonemura, Keiji; Mukai, Mizue Hisanitsu Pharmaceutical Co, Japan
SOURCE: Japan Jok Kapi Tokkyo Koho, 14 pp.
COOR: JKXXAF
DOCUMENT TYPE: Patent LANGUAGE: JAPANE JKXXAF
EANHIJY ACC. NUMI. COUNT: 1

DOCUMENT TYPE: LANGUAGE: FAMILY ACC. NUM. COUNT: PATENT INFORMATION:

PATENT NO. KIND DATE APPLICATION NO. DATE JP 09003075
PRIORITY APPLM. INFO.:
OTHER SOURCE(S):
GI A2 19970107 JP 1995-173008 JP 1995-173008 19950616 MARPAT 126:171594

R2R1CH(O)m(CH2)n1

The title compds. [I; R1 - H, lower alkyl, (un)substituted Ph; R2 = (un)substituted Ph, pyridyl, (un)substituted 2-benziaidazolyl, etc.; R3, R4 - H, lower alkyl; m = 0-1; n = 0-3; p, q = 0-1) are preight prosessing histamine and allergy inhibitory, are useful for prevention and treatment of atopic dermatoris, allergy chinitis and bronchial asthma, and other allergic diseases. Thus, 1-[2-bis(4-fluorophenyl)methoxyethyl]-4-piperidisecarbaldehyde was reacted with 2,3,5,6-tetrahydro-3-commids2[2,1-b]thiazole in the presence of AcONa to give 35t the title compd. (I1). II at 3 X 10-5 N showed 42.1% histamine releasing inhibitory when tested on rabbit in vivo.
186262-33-9P 186262-34-OF 186262-35-1P
186262-36-2P
RL: BAC (Biological activity or effector, except adverse); BSU (Biological

11

ANSWER 10 OF 32 CAPLUS COPYRIGHT 2003 ACS (Continued) study, unclassified), SPN (Synthetic preparation), THU (Therspeutic use); BIOL (Biological study); PREF (Preparation); USES (Uses) (prepn. of nitrogen-conty. heterocycly1 compds. as antiallergic agents) 18c5c2-3-3-9 CAPLUS Imudazo(2,1-b)thiazol-3(2H)-one, 2-[[1-[[1-[(4-fluoropheny1)methy1]-1H-benzimidazol-2-y1]methy1]-4-piperidiny1]methylene]-5,6-dihydro- (9CI) (CA INDEX NAME)

186262-34-0 CAPLUS Imidazo[2,1-b] thiazol-3(2H)-one, 5,6-dihydro-2-{[1-{[1-{(4-methoxyphenyl)methyl]-1H-benzimidazol-2-y1]methyl]-4-piperidinyl]methylene]- (9CI) (CA INDEX NAME)

186262-35-1 CAPLUS SH-Thiazolo(3,2-alpyrimidin-3(2H)-one, 2-[[1-[[1-[(4-fluorophenyl)methyl]-H-benzimidazol-2-yl]methyl]-4-piperidinyl]methylene]-6,7-dihydro-6,6-dimethyl- (9CI) (CA INDEX NAME)

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L6 ANSWER 10 OF 32 CAPLUS COPYRIGHT 2003 ACS (Continued)

186262-36-2 CAPLUS 5H-Thiazolo[3,2-a]pyrimidin-3(2H)-one, 2-[[1-[(1-ethyl-1H-benzimidazol-2-yl]methyl]-4-piperidinyl]methylene]-6,7-dihydro-6,6-dimethyl- (9CI) (CA INDEX NAME)

ANSWER 11 OF 32 CAPLUS COPYRIGHT 2003 ACS (Continued)

181053-95-2 CAPLUS IM-Benzimidszole, 6-chloro-1-[(3-chlorophenyl)methyl]-2-[(4-methyl-1-piperidinyl)methyl] (9CI) (CA INDEX WAME)

181053-96-3 CAPLUS 1H-Benzimidazole, 1-[(4-fluorophenyl)methyl]-6-methyl-2-[(4-methyl-1-paperidinyl)methyl]- (9CI) (CA INDEX NAME)

181053-97-4 CAPLUS
1H-Benzimidazole, 1-[(3-chlorophenyl)methyl]-6-methyl-2-[(4-methyl-1-piperidinyl)methyl]- (9CI) (CA INDEX NAME)

L6 ANSWER 11 OF 32 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER:
DOCUMENT NUMBER:
1996:429470 CAPLUS
125:221699
Synthesis and antimicrobial activity of some new piperidinyl benzimidazoles
Kus, Canan; Goker, Hakan; Ayhan, Gulgun; Ertan, Rahmiyer Altanlar, Nurten; Akin, Ahmet
Dep. Pharmaceutical Chem., Ankara Univ., Ankara, 06100, Turk.
Farnaco (1996), 51(6), 413-417
COOEN: FRMCE8
OCCUMENT TYPE:
LANGUAGE:
G1

PUBLISHER: 00CUMENT TYPE: LANGUAGE: GI

$$R = \begin{bmatrix} R^1 \\ N \\ N \end{bmatrix}$$
 (CH₂) $n = N$ Me

A series of 2-(4-methylpiperidin-1-yl)-1,5(6)-disubstituted ltd-benzimidazoles I [R = 5(6)-H, 5(6)-Cl, 5-H, 6-Cl, 5(6)-Me, 5(6)-CO2He, etc.; Rl = H, CH2Ph, CH2C6H4Cl-4, etc.; n = 0, 1] were prepd. through the reaction of 2-chloro (or 2-chloromethyl)-1H-benzimidazole derivs. with 4-methylpiperidine. For the prepn. of the individual isomers, compds. I (R = 5-H, 6-H, Rl = CH2C6H4Cl-4, n = 0); R = 5-Cl, Rl = CH2C6H4Cl-4, n = 0); R = 5-Cl, Rl = CH2C6H4Cl-4, n = 0); R = 5-Cl, Rl = CH2C6H4Cl-4, n = 0); R = 5-Cl, Rl = CH2C6H4Cl-4, n = 0); R = 5-Cl, Rl = CH2C6H4Cl-4, n = 0); R = 5-Cl, Rl = CH2C6H4Cl-4, n = 0); R = 5-Cl, Rl = CH2C6H4Cl-4, n = 0); R = 5-Cl, Rl = 5-H, 6-H, Rl = CH2Ph, CH2C6H4P-4, n = 0); exhibited the best antifungal activity. lsi053-97-4P 181053-98-5P 181053-96-3P 181053-98-5P 181053-98-5P (Riological activity) or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); BIO (Biological study); NERP (Preparation) (prepn. and fungicidal activity of piperidinyl benzimidazoles) 181053-94 CAPLUS IH-Benzimidazole, l-[(4-fluorophenyl)methyl]-2-[(4-methyl-1-piperidinyl)methyl]- (9Cl) (CA INDEX NAME)

ANSWER 11 OF 32 CAPLUS COPYRIGHT 2003 ACS (Continued)

181053-98-5 CAPLUS
1H-Benzimidazole, 5-chloro-1-[(4-chlorophenyl)methyl]-2-[(4-methyl-1-piperidinyl)methyl]- (9CI) (CA INDEX NAME)

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L6 ANSWER 12 OF 32 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER:
DOCUMENT NUMBER:
1996:35029 CAPLUS
124:232250
Piperidinyldioxobutanoic acid derivatives as inhibitors of influenza endonuclease
Selnick, Marold G., Ponticello, Gerald S.; Baldwin, John J.; Tomassini, Joanne E.
Merck and Co., Inc., USA
DOCUMENT TYPE:

DOCUMENT TYPE:

DOCUMENT TYPE: LANGUAGE: FAMILY ACC. NUM. COUNT: PATENT INFORMATION: English

| PATENT NO. | KINO | DATE | APPLICATION NO. | DATE |
|--------------------------|----------|----------------------|---------------------------------|----------|
| us 5475109 | Α | 19951212 | US 1994-324190 | 19941017 |
| US 5618830 | A | 19970408 | US 1995-536294 GB 1995-20625 | 19950929 |
| GB 2294264 GB 2294264 | A1 B2 | 1996D424 19981014 | GB 1995-20625 | |
| PRIORITY APPLN. INFO. | | | US 1994-324190 | 19941017 |

MARPAT 124:232250 OTHER SOURCE (S):

Dioxobutanoic acids substituted with piperidine or similar N-substituted satd. cycloalkyls, I or pharmaceutically acceptable salt, hydrate or crystal forms thereof, wherein: X is CH2, CH2CH2, or a bond; Y is CH2, CO, SO2, or a bond; Y is CH2, CO, SO2, or a bond; R1 and R2 are independently selected from the following: branched or unbranched C1-6 alkylow, NC1-6 alkyl, C3-8 cycloalkyl, Ph, maphthyl, pyridyl, furanyl, thienyl, or quinolinyl, any of which may be substituted once or

L6 ANSWER 13 OF 32 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 1995:609512 CAPLUS
DOCUMENT NUMBER: 123:198743
TITLE: 123:198743
SYNThesis of 1,2,5(6)-trisubstituted benzimidazoles and evaluation of their antimicrobial activities and evaluation of their antimicrobial activities and evaluation. Canana Abbasoglu, Ufuk
CORPORATE SOURCE: Fac. Pharmacy, Univ. Ankara, Tandogan, 06100, Turk.
Archiv der Pharmazie (Weinheim, Germany) (1995), 328(5), 425-30
CODEN: ARPMAS; ISSN: 0365-6233

PUBLISHER: DOCUMENT TYPE:

LANGUAGE:

328(5), 425-30
CODEN: ARPMAS; ISSN: 0365-6233

LISHER: VCH
MINAGE: Figlish
A series of benzimidazoles, having several substituents on the azole and benzene nuclei, were prepd. and evaluated in vitro for antimicrobial activity. At first 2-chloro or 2-chloromethyl-5(6)-substituted-H-benzimidazoles were synthesized, which were then substituted at C-2 vith several piperazine or piperidine derivs. The antibacterial activity of these compds, against Staphylococcus aureus, Bacillus subtilis, Escherichia coli, and Pseudomonas aeruginosa, and the antifungal activity against Candida albicans, Candida stellatoidea, Candida praepsilosis, and Candida phecapilosis, were detd. as the MIC values. Since 5-chloro-2-[(4-methyl-1-piperidinyl)methyl]-H-benzimidazole exhibits good activity, henzimidazole derivs. having Et, allyl, benzyl, and p-fluorobenzyl substituents at C-1 were prepd., and slightly increased activity, was seen.
167970-29-8P 167970-30-1P 167970-31-2P 167970-29-19 167970-47-0P 167970-31-2P 167970-29-19 167970-30-55 P NI: BAC (Biological activity or effector, except adverse); BSU (Biological study), unclassified); SPN (Synthetic preparation); BIOL (Biological activity or effector). PREP (Preparation) (repn. and biocidal activity of (piperidinylalkyl)benzimidazole and analogis) 167970-29-8 CAPLUS

IH-Benzimidazole, 5-chloro-2-[(4-methyl-1-piperidinyl)methyl]-1-(phenylmethyl)-, dihydrochloride (9CI) (CA INDEX NAME)

●2 HCl

167970-30-1 CAPLUS | H-Benzimidazole, 5-chloro-1-ethyl-2-[(4-methyl-1-piperidinyl)methyl]-, dihydrochoride (9CI) (CA INDEX NAME)

ANSWER 12 OF 32 CAPLUS COPYRIGHT 2003 ACS (Continued)
twice with C1-5 alkyl, C3-8 cycloalkyl, Ph, quinolinyl, pyridyl, furanyl,
thienyl, C1-6-alkown, Br. F, or C1, are found to inhibit the cap-dependent
endonuclease of influenza virus. These compds. are useful in the
prevention or treatment of infection by influenza virus and the treatment
of influenza, either as compd., pharmaceutically acceptable salts,
pharmaceutical compn. ingredients, whether or not in combination with
other antivirals, immunomodulators, antibiotics or vaccines. Methods of
treating influenza and methods of preventing or treating infection by
influenza virus are also described. Thus, e.g., treatment of
N-benzyl-3-acetyl-3-(4-chlorobenzyl) piperidine with d-Me oxalate and NaH
followed by HCl afforded 4-(N-benzyl-3-(4-chlorobenzyl)-piperidin-3-yl]2,4-dioxobutanoic acid hydrochoride (II-HCl) which inhibited alfalfa
mosaic virus primed flu transcription with ICSO = 1.1 .mu.M.
174603-199 primed flu transcription with ICSO = 1.1 .mu.M.
1810. (Biological activity or effector, except adverse), BSU (Biological
study, unclassified), SSN (Synthetic preparation); THU (Therapeutic use);
BIOL (Biological study); PREP (Preparation); USES (Uses)
(piperidinyldoxobutanoic acid derivs. as inhibitors of influenza
endonuclease)
174605-79-9 CAPLUS
2-Butenoic acid, 4-{3-{(4-chlorophenyl)methyl}-1-[(1-methyl-1Hbenzimidazol-2-yl)methyl]-3-piperidinyl]-2-hydroxy-4-oxo-, hydrochloride
(SCI) (CA INDEX NAME)

$$\begin{array}{c|c} & & & & \\ & & \\ & & & \\ & & & \\ & & & \\ & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\$$

•x HCl

(Continued) ANSWER 13 OF 32 CAPLUS COPYRIGHT 2003 ACS

●2 HC1

167970-31-2 CAPLUS 1H-Benzimidazole, 5-chloro-2-[(4-methyl-1-piperidinyl)methyl]-1-(2-propenyl)-, dihydrochloride (9CI) (CA INDEX NAME)

●2 HC1

167970-32-3 CAPLUS
1H-Benzimidazole, 5-chloro-1-[(4-fluorophenyl)methyl]-2-[(4-methyl-1-piperidinyl)methyl]-, dihydrochloride (9CI) (CA INDEX NAME)

167970-47-0 CAPLUS 1H-Benzimidazole, 6-chloro-2-[(4-methyl-1-piperidinyl)methyl]-1-(phenylmethyl)-, dihydrochloride (9CI) (CA INDEX NAME)

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ANSWER 13 OF 32 CAPLUS COPYRIGHT 2003 ACS

●2 HCl

167910-48-1 CAPIUS |H-Benzimidazole, 6-chloro-1-ethyl-2-[(4-methyl-1-piperidinyl)methyl]-, dthydrochloride (9C1) (CA INOEX NAME)

●2 HCl

167970-49-2 CAPLUS 1H-Benzinidazole, 6-chloro-2-[(4-methyl-1-piperidinyl)methyl]-1-(2-propanyl)-, dihydrochloride (9CI) (CA INDEX NAME)

●2 HC1

167970-50-5 CAPLUS

IH-Benzimidazole, 6-chloro-1-[(4-fluorophenyl)methyl]-2-[(4-methyl-1-piperidinyl)methyl]-, dihydrochloride (9C) (CA INDEX NAME)

L6 ANSWER 14 OF 32 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 1995:224792 CAPLUS
1TITLE: 12:31519
INVENTOR(S): PATENT ASSIGNEE(S): SOURCE: COUNTY APPLIES AND ACCESSION ACCESSI FAMILY ACC. NUM. COUNT: PATENT INFORMATION:

PATENT INFORMATION:

PATENT NO. XIND DATE APPLICATION NO. DATE

W0 9421615 A1 19940329 W0 1994-GB528 19940316

W: AT, AU, BB, BG, BR, BY, CA, CH, CM, CZ, DE, DK, ES, FI, GB, HU, JP, KP, KR, KZ, LK, LU, LV, MG, MN, MW, NL, NO, NZ, PL, PT, RO, RU, SD, SE, SI, SK, UA, US, UZ, VN

RY: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG

CA 2156336 AA 19940329 A1 19940316

AU 9462156 A1 19941031 AU 1994-62156 19940316

AU 969045 B2 19970619

EP 689535 A1 19940301 EP 1994-909233 19940316

EP 689535 B1 19980923

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, NL, PT, SE, JP 3968030 T2 19960827 JP 1994-909233 19940316

AT 171447 E 19981015 AT 1994-909233 19940316

ES 2121193 T3 19981116 ES 1994-909233 19940316

ES 2121193 T3 19981116 ES 1994-909233 19940316

ES 2121193 A1 19980203 US 5714498 A 19980203 US 1995-530099 19950912

GR 1993-16258 19930318 GB 1993-16258 19930318

GR 1993-16258 19930318

GR 1993-16258 19930318

COTHER SOURCE(S): MARPAT 122:31519

OTHER SOURCE(S): MARPAT 122:31519

Title compds. (I; E = CH2, CH2CH2: Q = e.g., piperidino group Q1: R = H, alkyl; R1 = H, alkyl, alkoxy, aryl, etc.: R2 = alkyl, alkoxy, aryl, etc.:

L6 ANSWER 13 OF 32 CAPLUS COPYRIGHT 2003 ACS (Continued)

●2 HC1

ANSWER 14 OF 32 CAPLUS COPYRIGHT 2003 ACS (Continued)
R3-R5 = H, halo, hydrocarbyl, heterocyclyl, etc. dashed line = optional
bond) were prepd. Thus, 2-chloromethylbenzımidazole was condensed with
4-(2-phenylethyl)piperidine to give title compd. II. I had Ki of
<1.5.mu.M for displacement of spiperone from human D4 receptors in vitro.
189557-36-59
RIL RBC (Richards) Column

Injustration of the provided series of the pr

Double bond geometry as shown.

●2 HC1

09994012 Page 20 01/28/2003

L6 ANSWER 15 OF 32 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER:
DOCUMENT NUMBER:
1098:128908 CAPLUS
109:128908 Synthetic uses of 1-[[(methylthio)thiocarbonyl]methyl]
pyridinium iodide. Synthesis of new benzimidazole
derivatives
AUTHOR(S):
Cuadro, Ana M.; Alvarez-Builla, Julio; Vaquero, Juan
J.

J. Dep. Quim. Org., Univ. Alcala de Henares, Madrid, CORPORATE SOURCE:

spain Heterocycles (1988), 27(5), 1233-40 CODEN: HTCYAM; ISSN: 0385-5414 Journal SOURCE:

DOCUMENT TYPE: LANGUAGE:

English CASREACT 109:128908 OTHER SOURCE(S):

The title pyridinium compd. (I) was treated with phenylenediamines II (R = H, R1 = H, Me, Cl, CMe; R = R1 = Me) in refluxing MeOR to give benzimidazoles III. III can be alkylated and acylated by std. procedures. III (R = H, R1 = H, Me, Cl; R = R1 = Me) were reduced with Na252O4 and then treated with HBr to give piperidine derivs. IV.

116423-16-BP RL: RCT (Reactant): SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent) (preph. and benzylation of, with benzyl chloride)

116423-16-8 CAPIUS Pyridinium, 1-[[1-phenylmethyl]-1H-benzimidazol-2-yl]methyl]-, iodide (9CI) (CA INDEX NAME)

L6 ANSWER 15 OF 32 CAPLUS COPYRIGHT 2003 ACS (Continued) ANSWER 15 OF 32 CAPLUS COPYRIGHT 2003 ACS (Continued)

• I-

116423-77-99 116423-78-09
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of)
116423-77-9 CAPLUS
Pyrtidinium, 1-[(1-methyl-1H-benzimidazol-2-yl)methyl]-, iodide (9CI) (CA
INDEX NAME)

• I-

116423-78-0 CAPLUS
Pyr.dlnium, 1-[2-phenyl-1-[1-(phenylmethyl)-1H-benzimidazol-2-yl]ethyl]-,
iodide (9CI) (CA INDEX NAME)

L6 ANSYER 16 OF 32 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 1988:437821 CAPLUS
109:37821
TITLE: 109:37821
Preparation of 4-[(bicyclic heterocycly1)methyl]piperidines and analogs as antihistaninus
Janssens, Frans E., Kennis, Ludo E. J.; Hens, Jozef F.; Torremans, Joseph L. G.; Diels, Gaston S. M.
Janssen Pharmaceutica N. V., Belg.
U.S., 59 pp. Cont.-in-part of U.S. Ser. No. 571,135, abandoned.
COODN: USXCAM
DOCUMENT TYPE: Patent
LANGINGE: Patent
English

DOCUMENT TYPE: LANGUAGE: FAMILY ACC. NUM. COUNT: PATENT INFORMATION: English 2 APPLICATION NO. DATE PATENT NO. KIND DATE

| LAIDHT NO. | ******* | D | | | |
|-----------------------|---------|--------------|-------|------------------------|----------|
| | | | | | |
| US 4695575 | Α | 19870922 | | 1985-747754 | 19850624 |
| ES 539281 | A1 | 19870616 | ES | 1984-539281 | 19841231 |
| AU 8537364 | A1 | 19850912 | AU | 1985-37364 | 19850107 |
| AU 573673 | В2 | 19880616 | | | |
| CA 1259609 | A1 | 19890919 | CA | 1985-471589 | 19850107 |
| FI 8500079 | A | 19850710 | FI | 1985+79 | 19850108 |
| FI 83867 | В | 19910531 | | | |
| FI 83867 | č | 19910910 | | | |
| NO 8500085 | Ä | 19850710 | NO | 1985-85 | 19850108 |
| NO 160849 | В | 19890227 | | | |
| NO 160849 | č | 19890607 | | | |
| DK 8500089 | Ä | 19850710 | DK | 1985-89 | 19850108 |
| JP 60185777 | A2 | 19850921 | | 1985-479 | 19850108 |
| | B4 | 19950726 | | 1500 | |
| JP 07068240 | | 19850930 | 1117 | 1985-61 | 19850108 |
| HU 36471 | A2 B | 19900528 | 110 | 1505 01 | ., |
| HU 200338 | | 19860827 | 71 | 1985-187 | 19850108 |
| ZA 8500187 | A | | | 1985-117252 | 19850108 |
| RO 90622 | В3 | 19861210 | | 1985-3836858 | 19850108 |
| su 1396964 | A3 | 19880515 | | | 19850108 |
| IL 74018 | A1 | 19880831 | | 1985-74018 | 19850109 |
| PL 145710 | B1 | 19881031 | | 1985-251488 | |
| US 4839374 | A | 19890613 | | 1987-94987 | 19870910 |
| PRICRITY APPLN. INFO. | : | | | 84-569369 | 19840109 |
| | | | | 84-671135 | 19841113 |
| | | | | 85-747754 | 19850624 |
| OTHER SOURCE(S): | C# | SREACT 109:3 | 7821 | | |
| GI | | | | | |
| OTHER SOURCE(S): | C# | SREACT 109:3 | US 19 | 84-671135 85-747754 | 19850624 |

09994012 Page 21 01/28/2003

L6 ANSWER 16 OF 32 CAPLUS COPYRIGHT 2003 ACS (Continued)

$$\begin{array}{c} RZ \\ RN \\ \end{array} \begin{array}{c} B \\ N \\ \end{array} \begin{array}{c} A^1 \\ A^2 \\ \end{array} \begin{array}{c} A^2 \\ A^3 \\ \end{array} \begin{array}{c} I \\ RN \\ \end{array}$$

The title compds. [I; 3 of Al-A4 = (un) substituted CH, the 4th = N, (un) substituted CH; B = CH2, O, So, So2; R = substituted CL-6 alkyl, alkoxy, alkylthio, amino, pyrrolidinyl, piperidinyl, hexahydroazepinyl, etc.; Rl = H, alkyl, cycloalkyl, (un) substituted aryl, heteroaryl, etc.; Rl = H, alkyl, cycloalkyl, (un) substituted aryl, heteroaryl, (hetero) aralkyl; R2 = H, alkyl) and their stereoisomers and acid salts were prepd. as antihistaminics and serotonin antagonists.

l-[(4-Filorophenyl) methyl]-2-(4-piperidinylmethyl)-H+-benzimidazol-5-ol and PhSCHZCHZBr were refluxed 2 h in MeZHCHZCOMe contg. Na2CO3 to give 27.8% benzimidazole deriv. (II). I inhibited compd. 48/80-induced lethality in rats, caused by histamine release, with EDSO of 0.005-0.16 mg/kg s.c. or orally. I also inhibited gastric lesions caused by simultaneous release of serotonin.

9963-46-99
RL: BAC (Bloological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Bloological study); PREP (Preparation); USES (USES)

[prepn. of, as antihistaminic]

9963-46-9 CAPLUS
3H-imadazo(4,5-b)pyridine, 2-[(1-[[1-(1H-benzimidazol-2-ylmethyl)-1H-benzimidazol-2-yl] methyl]-4-piperidinyl] methyl]-3-[(4-fluorophenyl) methyl]-(9CI) (CA INDEX NAME)

L6 ANSWER 17 OF 32
ACCESSION NUMBER:
DOCUMENT NUMBER:
1097:407096 CAPLUS
11TLE:
107:7096
Psychotropic agents: synthesis and antipsychotic activity of substituted .beta.-carbolines
ADOU-oblatbia, Magid; Patel, Usha R., Moyer, John A.;
Muth, Eric A.
60URCE:
40CENERY SOURCE:
40CENERY SOURCE:
40CENERY SOURCE:
40CENERY SOURCE:
40CENERY SOURCE:
40CENERY SOURCE:
40CENERY SOURCE SOURCE

DOCUMENT TYPE: LANGUAGE: OTHER SOURCE(S): GI

ν(CH₂) nR²

Forty-four substituted .beta.-carbolines I [R = H, OMe, Cl, F; Rl = H, Ne2N (CH2)3, PhcH2, piperidinylpropyl, etc., R2 = 2-, 4-pyridinyl, 2-, 4-quinolinyl, etc., n = 1, 2, 3, 4, 7] were tested for potential antipsychotic activity. For example, 2,3,4,9-tetrahydro-IM-pyrido[3,4-b]indole was treated with 4-picolyl chloride hydrochloride in OMF in the presence of K2CO3 and Cs2CO3 to give 36% I.2HCl (R = Rl = H, R2 = 4-pyridinyl, n = 1). Several compds. displayed moderate antipsychotic activity in vitro and in vivo as detd. by relevant receptor binding assays and behavioral tests. The effect of substituents on antipsychotic activity was examd. I (R = Rl = H, R2 = 2-pyridinyl, 2-quinolinyl; n = 2) were the most potent analogs, blocking discrete trial conditioned avoidance responding in rats with AB50's of 23 and 10 mg/kg, resp. Both showed moderate activity at the D2 receptor sites, but they lacked oral activity. In contrast I (R = Rl = H, R2 = 4-pyridinyl, n = 4) exhibited oral activity in the discrete trial conditioned avoidance screen with an AB50 of 31 mg/kg. Most compds. did not antagonize apomorphine-induced stereotyped behavior, which is indicative of low potential for extrapyramidal side effect (EPS) liability.

107890-27-7 (RPLUS)

107890-27-7 (CAPLUS)

(Continued) ANSWER 16 OF 32 CAPLUS COPYRIGHT 2003 ACS

ANSWER 17 OF 32 CAPLUS COPYRIGHT 2003 ACS (Continued)

09994012 Page 22 01/28/2003

L6 ANSWER 18 OF 32 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER:
DOCUMENT NUMBER:
TITLE:
INVENTOR(S):
PATENT ASSIGNEE(S):
SOURCE:
COCUMENT TYPE:
CAMBOOK ANSWER 18 OF 32 CAPLUS COPYRIGHT 2003 ACS
1986:68861 CAPLUS
104:68861
(Piperidinylmethyl) - and (piperidinyloxy)benzimidazole s and -imidazopyridines
5 and -imidazopyridines
5 Janssens, Frans Éduard; Kennis, Ludo Edmond Josephine;
Hens, Jozef Francis; Torremans, Joseph Leo G.; Oiels,
Gaston Stanislas M.
Janssen Pharmacoutica N. V., Belg.
EUr. Pat. Appl., 140 pp.
COOEM. EFEXXOW
FAMILY ACC. NUM. COUNT:
FAMILY ACC. NUM. COUNT:
PATENT INFORMATION:
2

LANGUAGE: FAMILY ACC. NUM. COUNT: PATENT INFORMATION:

| PATENT | INFORMATI | UN: | | | | | | |
|--------|------------|-------|----|-----------|-----|-------|---------------|----------|
| P | ATENT NO. | | | OATE | | | PLICATION NO. | OATE |
| | · | | | | | | | 19841213 |
| | 151826 | | | | | EP | 1984-201851 | 19041213 |
| E | 151826 | | Bl | 19930331 | | | | |
| | | BE, | | , FR, GB, | IT, | ы, | LU, NL, SE | 19841213 |
| A' | 87626 | | E | 19930415 | | | 1984-201851 | |
| | 5 539281 | | | | | ES | 1984-539281 | 19841231 |
| A | 8537364 | | | 19850912 | | ΑU | 1985-37364 | 19850107 |
| | 573673 | | B2 | 19880616 | | | | |
| | A 1259609 | | | 19890919 | | CA | 1985-471589 | 19850107 |
| F | 8500079 | | | | | FI | 1985-79 | 19850108 |
| F | 1 83867 | | | 19910531 | | | | |
| F | 1 83867 | | С | 19910910 | | | | |
| N | 8500085 | | | 19850710 | | NC | 1985-85 | 19850108 |
| N- | 160849 | | | 19890227 | | | | |
| N | 160849 | | С | 19890607 | | | | |
| 0 | K 8500089 | | A | 19850710 | | | 1985-89 | |
| J | P 60185777 | | A2 | 19850921 | | JP | 1985-479 | 19850108 |
| | 07068240 | | B4 | 19950726 | | | | |
| | U 36471 | | A2 | 19850930 | | HU | 1985-61 | 19850108 |
| н | U 200338 | | В | 19900528 | | | | |
| | A 8500187 | | Α | 19860827 | | ZA | 1985-187 | 19850108 |
| | 90622 | | В3 | 19861210 | | RC | 1985-117252 | 19850108 |
| | U 1396964 | | | 19880515 | | SL | 1985-3836858 | 19850108 |
| | 1, 74018 | | A1 | 19880831 | | 11 | 1985-74018 | 19850108 |
| | 1. 145710 | | В1 | 19881031 | | PI | 1985-251488 | 19850109 |
| | TY APPLN. | INFO. | | | | | 84-569369 | |
| INTON | | | • | | 1 | JS 19 | 84-671135 | 19841113 |
| | | | | | 1 | EP 19 | 84-201851 | 19841213 |
| | | | | | | | | |

L6 ANSWER 18 OF 32 CAPLUS COPYRIGHT 2003 ACS (Continued) ANSWER 18 OF 32 CAPLUS COPYRIGHT 2003 ACS (Continued)

$$\begin{array}{c|c} & & & \\ & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ &$$

The title compds. I (2-23 = CH, or one of 2-23 is N and the remainder are CH; 24 = CH2, 0, S, SO, SO2; R = alkyl, aryl-, heteroaryl-, acyl-hydroxy-, aryloxy, heteroaryloxy-, alkoxy-, arylthio-, carbonyl-, carboalkoxy-, cyano-, amino-, ureido-, thioureido-, or guandinoslkyl, cycloalkyl, alkenyl, arylalkenyl; R1 = H, alkyl; R2 = H, alkyl, cycloalkyl, aryl-, heteroaryl, aryl- or heteroarylalkyl), which were prepid. exhibited antihistaminic activity. Thus, a mixt of 2-(4-MeCSHGCHZNH)CBHANNZ and Et 1-benzyl-4-piperidineacetimidate hydrochloride in MeON was refluxed and NH3 was added to give benzimidazole

99963-46-9P

99953-46-9P
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepara

L6 ANSWER 19 OF 32 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 1995:615287 CAPLUS
OCCUMENT NUMBER: 103:215287
Five membered heterocyclic ring containing N-(bicyclic heterocyclyl)-4-piperidinamines
Janssens, Frans Eduard: Torremans, Joseph Leo Ghislanus, Hens, Jozef Francis; Van Offenwert, Theophilus Theresis
OUNCE: Janssen Pharmaceutica N. V., Belg.
EUR. Pat. Appl., 76 pp.
COEN: EPXXOW
Patent

DOCUMENT TYPE: LANGUAGE: FAMILY ACC. NUM. COUNT: PATENT INFORMATION: Patent English

| PATENT NO. | | OATE | APPLICATION NO. | DATE |
|--|-----|----------|----------------------------------|---------|
| ED 146037 | A2 | 19850619 | EP 1984-201326 | 1984091 |
| EP 145037 | A 3 | 19850710 | | |
| | B1 | | | |
| | | | LI, LU, NL, SE | |
| US 4634704 | A A | 19870106 | US 1984-625343 | 1984062 |
| CA 1247614 | Δ1 | | CA 1984-462540 | |
| AT 40130 | E | 19890215 | AT 1984-201326 | 1984091 |
| IL 73118 | Δ1 | 19880331 | IL 1984-73118 | 1984093 |
| 20 00457 | ממ | 10061210 | RO 1984-115894 | 1984100 |
| 102021 | | | FI 1984-3934 | 1984100 |
| FI 8403334 | B | 19900831 | | |
| FT 91797 | č | 19901210 | | |
| OK 8404784 | Ä | 19850407 | OK 1984-4784 | 1984100 |
| OK 163239 | B | 19920210 | | |
| FI 8403934 FI 81797 OK 8404784 OK 163239 OK 163239 NO 8404009 | č | 19920629 | | |
| NO 8404009 | Ā | 19850409 | NO 1984-4009 | 1984100 |
| NO 160441 | В | 19890109 | | |
| NO 160441 | С | 19890419 | | |
| AU 8433872 | A1 | 19850418 | AU 1984-33872 | 1984100 |
| AU 565884 | B2 | 19871001 | | |
| ES 536590 | A1 | 19851116 | ES 1984-536590 | |
| JP 61010577 | | 19860118 | JP 1984-208394 | 1984100 |
| JP 07098818 | B4 | 19951025 | | |
| ZA 8407847 | A | | | 1984100 |
| HU 38629 | A2 | 19860630 | HU 1984-3771 | 1984100 |
| HU 207514 SU 1440346 | В | 19930428 | | |
| SU 1440346 | A3 | 19881123 | SU 1984-3796140 | 1984100 |
| PL 146228 | B1 | 19890131 | PL 1984-249916 | 1984100 |
| RITY APPLN. INFO. | : | | US 1983-539597 US 1984-625343 | 1983100 |
| | | | US 1984-625343 EP 1984-201326 | 1984062 |

OTHER SCURCE(S): CASREACT 103:215287

GI For diagram(s), see printed CA Issue.

AB The title compds. [I; R = H, alkyl; R1 = H, alkyl, thienyl, halothienyl, pyrazinyl, thiagolyl, alkyliniacolyl, imidazolyl, alkylimidazolyl, (un)substituted Ph, alkyl substituted by 1 or 2 of these arom. groups; R2 = H, alkyl, cycloalkyl, alkanoyl, alkowycarbonyl, (un)substituted Ph, R3 = R4(CH2)n221, R4(CH2)n221, R4(CH2)n221(K1)221, O; R4 = 5-membered heterocyclyl contg. gtoreq: N atoms, optionally fused to a C6H6 ring; X = (un)substituted CH:CHCH:CH, N:CHCH:CH, CH:CHCH:CH, CH:CHCH:N:H = O, S, OZNCH, R5N; R5 = H, alkyl, cyano, NO2, acyl; Z = O, S, R7N, bond; R7 = H, alkyl; n = O-6; m = O-2] were prepd. Thus, N - (2-nitrophenyl)-2-furanmethanamine was

09994012 Page 23 01/28/2003

- L6 ANSWER 19 OF 32 CAPLUS COPYRIGHT 2003 ACS (Continued) hydrogenated and the diamine condensed with Et 4-isothlocyanato-1-piperidinecarboxylate to give thiousea deriv. II. This was cyclized to a benzimidazole deriv. by heating with Hg0 and S in EtOH, decarboxylated by heating in aq. HBr, and N-alkylated with 4-(chloromethyl)-5-methyl-1H-imidazole-HG1 to give benzimidazolamine III. The antihistaminic properties of I were demonstrated in rats, where I inhibited the lethality of compd. 46/80 with ED50 0.005-1.25 mg/kg g.c. or orally, and inhibit gastric lesions in rats caused by the same agent with ED50 0.04-1.25 mg/kg s.c. 5. C. 99137-45-8P
 - 99137-45-8P
 RL: RAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREF (Preparation) (prepn. and antihistaminic activity of) 99137-45-8 CAPLUS
 IH-Benzimidazol-2-amine, 1-[(4-fluorophenyl)methyl)-N-[1-[[1-[(4-fluorophenyl)methyl]-N-[1-[(4-f

PAGE 1-A

L6 ANSWER 20 OF 32 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 1979:54879 CAPLUS
TITLE: 90:54879 Some reactions of 2-cyanobenzimidazoles
AUTHOR(S): Bukowski, Ludvik
Inst. Technol. Anal. Pharm. Prod., Sch. Med., Gdansk, Pol.
SOURCE: ACTA Poloniae Pharmaceutica (1978), 35(3), 295-9
CODEN: APPRAX, ISSN: 0001-6837
JOURNAIL LANGUAGE: Polish

DOCUMENT TYPE: LANGUAGE: GI

CM 1

CRN 69007-07-4 CMF C14 H18 N4

L6 ANSWER 19 OF 32 CAPLUS COPYRIGHT 2003 ACS (Continued)

PAGE 2-A

ANSWER 20 OF 32 CAPLUS COPYRIGHT 2003 ACS (Continued)

CM

09994012 Page 24 01/28/2003

L6 ANSWER 21 OF 32 CAPILIS COPYRIGHT 2003 ACS
ACCESSION NUMBER:
DOCUMENT NUMBER:
SYNTHESIS and properties of N-hetarylpyridinium salts
Synthesis and Poperties of N-hetarylpyridinium salts
Synthesis and Popertie

CODEN: KGSSAQ; ISSN: 0453-8234 Journal

DOCUMENT TYPE:

LANGUAGE: GI

Reaction of X(NH2)2 [X = (CH2)6, p-phenylene] with pyrylium salts I (R = R1 = Ph) R = Me, RI = Ph) gave 35-IDD\$ II. III (n = 2, 3) were obtained in 78-83.5% yield similarly. IV (n = 2, 3) were obtained in 43-8% yield by reaction of o-CeMe (NH2)2 with the resp. pyridinium salt. The pXa of V (R = H, 2,4,6-trimethyl(phenyl)pyridiniomethyl, 2,4,6-triphenylpyridinion R1 = H, 2.4,6-trimethyl(phenyl)pyridinion R2 = H, Me, Et, nonyl) and VI (R = 2-and 4-pyridyl) were tabulated. 67766-23-8P

C104- VI

67766-23-8P
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of)
67766-23-8 CAPUS
Pyrtddnium, 1-[(1-acetyl-1H-benzimidazol-2-y1)methyl]-2,4,6-triphenyl-,
perchlorate (9CI) (CA 1NDEX NAME)

CM 1

L6 ANSWER 22 OF 32 CAPLUS COPYRIGHT 2003 ACS ACCESSION NUMBER: 1975:531520 CAPLUS DOCUMENT NUMBER: 83:131520 ENTITLE: 80:131520 Enzimidazole derivative Steck, Edgar A.; Brundag CORPORATE SOURCE: 0 Organic Preparations and 1275:7 (11) 6-11 Benzimidazole derivatives

Benzimidazole derivatives Steck, Edgar A.; Brundage, R. Pauline Sterling-Winthrop Res. Inst., Rensselaer, NY, USA Organic Preparations and Procedures International (1975), 7(1), 6-11 CODEN: OPPIAK; ISSN: 0030-4948 JOURNAL

CODEN OPPIAK; ISSN: 0030-4948

DOCUMENT TYPE: Journal
LANGUAGE: Sepilish

For diagram(s), see printed CA Issue.

1 - (Aminomethyl) benzimidazoles [I, R = Me, NR2 = 3-carbamoyl-1-piperidinyl,
 3 - (diethylcarbamoyl-1-piperidinyl, 4 - (2-hydroxyethyl) - 1-piperazinyl, R = 5 - C1, 6C1, or 5, 6-C12j were prepd.
 4 - (ethoxycarbonyl)-1-piperizinyl, R = 5 - C1, 6C1, or 5, 6-C12j were prepd.
 by Mannich reaction of the appropriate benzimidazole and amine;
 0-C6H4 (NB12) 2 or 4-chloro-o-phenylenediamine reacted with 2-deoxy-D-glucose
 in the presence of Cu(I) acetate to give the corresponding
 2 - (D-arabino-2,3,4,5-tetrahyd-coxypentyl) benzimidazole;
 2 - (chloromethyl)-1-methyl-2-benzimidazole was treated with piperazine and
 8 - (1-methyl-2-benzimidazoly)methyll piperazine and
 8 - (1-methyl-2-benzimidazoly)methyltropinium chloride resp.

II 56797-67-2F
 RI. SPN (Synthetic preparation); PREP (Preparation)

56797-67-28
RL: SPN (Synthetic preparation); PREP (Freparation)
(prepn. of)
56797-67-2 CAPLUS
8-Azoniabicyclo[3.2.1] octane, 3-hydroxy-8-methyl-8-[(1-methyl-1H-benzimidazol-2-yl)methyl]-, chloride, endo- (9CI) (CA INDEX NAME)

Relative stereochemistry.

• c1

ANSWER 21 OF 32 CAPLUS COPYRIGHT 2003 ACS CRN 67766-22-7 CMF C33 H26 N3 0 (Continued)

CM

CRN 14797-73-0 CMF Cl 04

L6 ANSWER 23 OF 32 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER:
1975:156314 CAPLUS
COCUMENT NUMBER:
82:156314
Pharmaceutical 2-(aminoethyl)-1-(2-benzoylethyl)benzimidazoles
INVENTOR(S):
Fauran, Clauder Eberle, Jeannine; Raynaud, Guy; Dorme, Nicole
PATENT ASSIGNEE(S):
SOURCE:
CODEN: GMXXEX
DOCUMENT TYPE:
LANGUAGE:
FAMILY ACC. NUM. COUNT:
1
CAPLUS COPYRIGHT 2003 ACS
62:105314
Patent
Ger. Offen. 32 pp.
CODEN: GWXXEX
Fauran
Ger. Offen. 32 pp.
CODEN: GWXXEX
Fauran
FAMILY ACC. NUM. COUNT:
1

LANGUAGE: FAMILY ACC. NUM. COUNT: PATENT INFORMATION:

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|----|---------------------|------|----------|-----------------|----------|
| | | | | DE 1974-2431532 | 1974D7D1 |
| | DE 2431532 | A1 | 1975D130 | | 19730703 |
| | FR 2244500 | A1 | 1975D418 | FR 1973-24388 | |
| | GB 1430894 | A | 1976D407 | GB 1974-26451 | 19740614 |
| | BE 816459 | A1 | 19741217 | BE 1974-145535 | 19740617 |
| | ZA 7403928 | A | 19750625 | ZA 1974-3928 | 19740619 |
| | US 3962256 | Ä | 19760608 | US 1974-481273 | 19740620 |
| | JP 50025566 | A2 | 19750318 | JP 1974-73184 | 19740626 |
| | | A1 | 19760108 | AU 1974-70642 | 19740701 |
| | AU 747D642 | | | NL 1974-8975 | 19740702 |
| | NL 7408975 | A | 19750107 | SE 1974-8728 | 19740702 |
| | SE 74D8728 | Α | 19750107 | SE 1974-8728 | 19140102 |
| | SE 408796 | С | 19791018 | | |
| | SE 4D8796 | В | 19790709 | | 0 |
| | ES 427871 | A1 | 19760801 | ES 1974-427871 | 19740702 |
| | su 525426 | D | 19760815 | SU 1974-2041960 | 19740702 |
| | CA 1030962 | Āl | 19780509 | CA 1974-203920 | 19740703 |
| | CH 599942 | A | 19780615 | CH 1974-9108 | 19740703 |
| _ | IORITY APPLN. INFO. | | 22.10010 | FR 1973-24388 | 19730703 |
| 23 | IORITY APPLN. INFO. | | | 110 15 15 15 1 | |

03410-JU-3 CAPLUS 1-Propanone, 1-phenyl-3-(2-(1-piperidinylmethyl)-1H-benzimidazol-1-yl)-(9CI) (CA INDEX NAME)

09994012 Page 25 01/28/2003

L6 ANSWER 23 OF 32 CAPLUS COPYRIGHT 2003 ACS

1-Propanone, 1-(4-chlorophenyl)-3-[2-(1-piperidinylmethyl)-1H-benzimidazol-1-yl]- (9CI) (CA INDEX NAME)

$$\begin{array}{c|c} & & & & & \\ & & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\$$

55416-44-9 CAPLUS 1-Propanone, 1-(4-fluorophenyl)-3-[2-(1-piperidinylmethyl)-1H-benzimidazol-1-yl]- (9CI) (CA INDEX NAME)

55416-50-7 CAPLUS 1-Propannen 1-(4-butcxyphenyl)-3-[2-(1-piperidinylmethyl)-1H-benzimidazol-1-yl]- (9C1) (CA INDEX NAME)

55416-57-4 CAPLUS
1-Propanone, 1-(4-methylphenyl)-3-[2-(1-paperidinylmethyl)-1H-benzimidəzol-1-yl]- (9C1) (CA INDEX NAME)

(Continued) ANSWER 23 OF 32 CAPLUS COPYRIGHT 2003 ACS

55416-64-3 CAPLUS 1-Propanone, 1-(2,4-dimethylphenyl)-3-[2-(1-piperidinylmethyl)-1H-benzimidazol-1-yl]- (9CI) (CA INDEX NAME)

$$\begin{array}{c|c} & & & \\ &$$

55416-71-2 CAPLUS 1-Propanone, 1-(2,4-dimethoxyphenyl)-3-{2-(1-piperidinylmethyl)-1H-benzimidazol-1-yl]- (9CI) (CA INDEX NAME)

55416-77-8 CAPLUS 1-Propanone, 3-[2-(1-piperidinylmethy1)-1H-benzimidazol-1-y1]-1-(3,4,5-trimethoxypheny1)- (9CI) (CA INDEX NAME)

RL: SPN (Synthetic preparation); PREP (Preparation)

(prepn. of)
53397-82-3 CAPLUS
1H-Benzimidazolium, 1,3-dimethyl-2-(pyridiniomethyl)-, chloride iodide
(9CI) (CA INDEX NAME)

• c1

*** FRAGMENT DIAGRAM IS INCOMPLETE ***

L6 ANSWER 25 OF 32 CAPLUS COPYRIGHT 2003 ACS ACCESSION NUMBER: 1973:136169 CAPLUS COUVENT NUMBER: 78:136169 PLUS COPYRIGHT 2003 ACS 1973:136169 CAPLUS 78:136169 Heteroaromatic N-oxides. XI. Aminolysis of esters of benzazole N-oxides and related quaternary salts Takahashi, Shiro: Hashimoto, Shinichiro; Kano, Hideo Shionogi Res. Lab., Shionogi and Co., Ltd., Osaka, Japan AUTHOR(S): CORPORATE SOURCE:

Japan Chemical & Pharmaceutical Bulletin (1973), 21(2), 287-95 SOURCE:

CODEN: CPBTAL; ISSN: 0009-2363

287-95
CODEN: CPBTAL; ISSN: 0009-2361
CODEN: CDBTAL; ISSN: 0009-2361
LANGUAGE: Journal
LANGUAGE: English
AB In connection with the abnormal reaction of Et 1-methyl-2benzimidazolcarboxylate 3-oxide (I) with piperidine, aminolysis of
related esters were investigated. The esters: I, 2-choxycarbonyl-1,3dimethyl-benzimidazolium iodide, 2-methoxycarbonylmethyl-1,3-dimethylbenzimidazolium iodide, Et 2-benzothiazolecarboxylate 3-oxide and
3-ethoxycarbonyl-3-methylehenzothiazolium perchlorate underwent abnormal
aminolysis, partly or predominantly, not only with secondary amine
(piperidine) but also with some primary amines, to give the corresponding
carbamates. Et tribromo-acetate also underwent abnormal cleavage with
some primary amines. Et 1-methyl-2-benzimidazolecarboxylate, Et
2-benzothi-azolecarboxylate, Et 2- and 4-pyridinecarboxylate, Et
2-benzothi-azolecarboxylate, Et 2- and 4-pyridinecarboxylate N-oxide and
4-ethoxycarbonyl-1-methylpyridinium iodide reacted with both primary an
secondary amines to yield only normal products, amides. Mechanisms
accounting for the different behavior of the esters towards amines were
discussed from electronic and steric points of view.

II 41036-95-4P
RL: SPN (Synthetic preparation); PREP (Preparation)

RL: SPN (Synthetic preparation); PREP (Preparation) (prepn. of) 41038-96-4 CAPLUS

41U38-96-4 CAFLUS Piperidine, 1-{(1-methyl-1H-benzimidazol-2-yl)carbonyl]- (9CI) (CA INDEX NAME)

09994012 Page 26 01/28/2003

L6 ANSWER 26 OF 32 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER:
DOCUMENT NUMBER:
177:1256628
77:1256628
Pharmaceutical 1-cinnamylbenzimidazoles
Pharmacsion Claude; Eberle, Jeannine; Raynaud, Guy;
Bailly, Yves
Bollalande S. A.
Ger. Offen., 15 pp.
CODEN: GWXXEX
DOCUMENT TYPE:
4 Patent
GERBAR DOCUMENT TYPE: LANGUAGE: FAMILY ACC. NUM. COUNT: PATENT INFORMATION:

APPLICATION NO. OATE PATENT NO. XIND OATE OE 2158011 DE 2158011 DE 2158001 DE 2158001 DE 2158001 FR 2115067 FR 2115067 FR 2115067 FR 2115067 FR 311419 AU 7135877 CS 174851 ES 397205 NL 7116314 US 3758459 SU 432718 GA 955253 SE 378245 19720622 19770127 19770915 19720707 19740322 19720615 19720508 19720830 19741129 19730328 19730328 19770429 19740501 19740501 19740615 DE 1971-2158801 19711126 A B2 C3 A5 B1 19701127 FR 1970-42636 CH 1971-523889
BE 1971-110247
ZA 1971-7617
IL 1971-38149
GB 1971-53020
AU 1971-5307
CS 1971-8113
ES 1971-1513
ES 1971-128736
SU 1971-1128736
SU 1971-1718896
CA 1971-128736
SE 1971-15183
FE 1971-15183 19711104 19711108 19711112 19711115 19711116 A A1 A1 A1 P A1 A D A1 B 19740924 19750825

SE 378245 B 19750825 SE 1971-15183 19711126
PRIORITY APPLM. INFO::

FR 1970-42636 19701127
GI For diagram(s), see printed CA Issue.

AB Twelve title compds. [I, R = Me, (CH2)30H, CH2CHMeOH, CH2OH, C

37566-19-1P

RL: SPN (Synthetic preparation); PREP (Preparation) (prepn. of) 37566-19-1 CAPLUS

J:300-13-1 CAFADS

1H-Benzimidazole, 1-(3-pheny1-2-propeny1)-2-(1-piperidiny1methy1)-,
monohydrochloride (9CI) (CA INOEX NAME)

L6 ANSWER 27 OF 32 CAPLUS COPYRIGHT 2003 ACS ACCESSION NUMBER: 1969:521707 CAPLUS DOCUMENT NUMBER: 71:121707 DOCUMENT NUMBER: New substances with complement fixation inhibition new Substances *In Company and Company action in vitro Muftic, Mahmoud Muftic, Mahmoud Hauptlab., Schering A.-G., Berlin, Fed. Rep. Ger. Quarterly Journal of Crude Drug Research (1969), 9(3), 1422-5 AUTHOR(S): CORPORATE SOURCE: SOURCE: COOEN: QJORAZ; ISSN: 0033-5525

DOCUMENT TYPE:

COOEN: QJORAZ; ISSN: 0033-5525
JOHANA

BURGE: German

A screening method for the detection of compds. causing complement fixation inhibition in vitro adaptable to routine purposes is described. The required reagents are: 0.85% NaCl soln., 2.5% soat red cell suspension, Standard amboceptor Behring did. 1:1000, and preserved guinea pig full complement Behring as standard. The method consists of a preliminary test the compds. are tested for soly, and hemolysis with 1 ml. of red cells and 1 ml. of a 100 .gamma./ml. soln. of the test compd. The complement evaluation, part the main test compd. The complement evaluation proceeds along generally accepted lines. The procedure for the main test was previously described. Visual evaluation of the results is possible, but evaluation with a Beckman spectrophotometer at 587 m.m. is preferable. Results are given for tests on a no of active compds. A Klebsiella polysaccharide and another polysaccharide were most active, 10 .gamma./ml. giving 50% complement fixation inhibition.

24625-25-0 CAPLUS

Benzimidazole, 1-(p-fluorobenzyl)-2-(piperidinomethyl)-, monohydrochloride (8CI) (CA INOEX NAME)

• HCl

ANSWER 26 OF 32 CAPLUS COPYRIGHT 2003 ACS (Continued)

HC1

L6 ANSWER 28 OF 32 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER:
DOCUMENT NUMBER:
1960:494769 CAPLUS
69:94769
In vitro experiments to detect new substances which inhibit complement binding
Lahr, A.; Muffic, M. -G., Berlin, Fed. Rep. Ger.
Int. Congr. Chemother., Froc., 5th (1967), Volume 6,
191-6. Editor(s): Spitzy, K. H. Verlag Wiener Med.
Akad.: Vienna, Austria.
CODEN: 200JAM.
Conference

09994012 Page 27 01/28/2003

L6 ANSWER 29 OF 32 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 1968:95827 CAPLUS
OCCUMENT NUMBER: 68:95827 Thizolylalkyl- and 2-thiadiazolylalkylbenzimidazoles
THILE: PATENT ASSIGNEE(S): Chimetron S.a r.l.
Fr., 3 pp.
CODEN: FRXXAK DOCUMENT TYPE: LANGUAGE: FAMILY ACC. NUM. COUNT: PATENT INFORMATION:

APPLICATION NO. OATE PATENT NO. KIND DATE

PATENT NO. KIND DATE APPLICATION NO. OATE

FR 1476560 19670414 FR 19650805

For diagram(s), see printed CA Issue.
A new class of biocides has been prepd. with general formula I. The title compds. are active as antihelmintics, fungicides, bactericides, and antiviral agents, can be formulated as feeds for animals or mixed with fertilizers for soil and plant systemic treatment. Thus, I (R1 - Me, R3NR4 is replaced by C1, R - H, R2 - 4 -thiazolyl, n - 0) was prepd. by treatment of 0.1 mole 1-methyl-2-((4-thiazolyl)hydroxymethyl)benzimidazole [II] in MeCN with 0.04 mole PC13, while the reaction temp. is kept (30, degree.) the same compd. was prepd. by reaction of II with SOC12. In a similar way were made I (R1 - Me, R2 - 4, 5-dimethyl-2-thiazolyl, R - R3 - R4 - H, n - 0) from 0.1 mole 1-methyl-2-[(4,5-dimethyl-2-thiazolyl, R - R3 - R4 - H, R - 0) from I on the product with CHC13; I (R1 - Me, R3 - 4+thiazolyl, R - R4 - 4+thiazolyl, n - 0) from II and PBC3; I (R - H, R1 - Me, R2 - 4+thiazolyl, R - R4 - 1) was prepd. by refluxing 0.1 mole 1-methyl-2-[(1-chloro-2-(4-thiazolyl)thyl)benzimidazole in MeCOEt and 0.1 mole anhyd. Nai; after filtration, 0.2 mole NHET2 was added and reflux continued for 8 hrs. followed by distin. of the solvent; the following I (R, R1, R2, NR3R4 or its replacement, and ngiven) were the following I (R, R1, R2, NR3R4 or its replacement, and ngiven) were the following I (R, R1, R2, NR3R4 or its replacement, and ngiven); H, Me, 4-thiazolyl, propholino, 1 H, H, 4-thiazolyl, C1, I; H, Me, 4-thiazolyl, morpholino, 1 H, H, 4-thiazolyl, NR62, 2, 5-6-Cl2 deriv. No phys. or biol. data are re-ported.

RL: SPN (Synthetic preparation); PREP (Preparation)

ANSWER 30 OF 32 CAPLUS COPYRIGHT 2003 ACS SSION NUMBER: 1967:46373 CAPLUS

(prepn. of) 20254-02-8 CAPLUS

Benzimidazole, 1-methyl-2-[1-piperidino-2-(4-thiazolyl)ethyl]- (8CI) (CA

ACCESSION NUMBER:

DOCUHENT NUMBER:

66:46373
Benzimidazole N-oxides. VII. Reactivity of 1,2-dimethylbenzimidazole 3-oxide
Takahashi, Shiro: Kano, Hideo
Shinogi Co., Ltd., Osaka, Japan
Chemical & Pharmaceutical Bulletin (1966), 14(11), 1219-27
CODEN: CPBTAL TITLE: AUTHOR (S): CORPORATE SOURCE: RECE: Shinogl Co., Ltd., Usaka, Japan (RECE): Chemical & Pharmaceutical Bulletin (1966), 14(11), 1219-27 (CODEN: CDEN: C SOURCE: DOCUMENT TYPE: LANGUAGE:

L6 ANSWER 29 OF 32 CAPLUS COPYRIGHT 2003 ACS (Continued)

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ANSWER 30 OF 32 CAPLUS COPYRIGHT 2003 ACS (Continued)

1 hr. on a water bath, and 50 ml. 10% aq. NaOH was added to ppt. a mixt. of 5- and 6-nitro-1,2-dimethylbenzimidazole. This mixt. was dissolved in 100 ml. RtOH and hydrogenated over 0.3 g. Adams Pt. On completion of the redn. catalyst and solvent were removed, 15 ml. Ac20 was added, the mixt. was heated 20 min. concd. and the residue in H20 was neutralized with NH3 to give 1 g. 5-acetamido-1,2-dimethylbenzimidazole, m. 248-9.degree. (aq. alc.) as insol. product and 1.5 g. 6-acetamido-1,2-dimethylbenzimidazole (X), m. 220-5.degree. (H2O), was isolated from the filtrate. X (1.2 g.), 70 mg. XI, 70 mg. Cu. powder, 0.9 g. XC203, and 10 g. phBr refluxed 20 hrs. afforded 1.76 g. 6-acetamilido-1,2-dimethylbenzimidazole. To a soln. of 0.5 g. 1-ethyl-2-methylbenzimidazole awoide (XI) and 0.3 g. III in 5 ml. CHC13 was added 0.39 ml. PhNCO in 3 ml. CHC13 (ice bath), and the mixt. was kept 30 mln. at room temp. and concd. to yield 0.45 g. 6-anilino-1-ethyl-2-methyl-benzimidazole, also obtained in 0.25 g. yield from 0.3 g. XI dihydrate and 0.20 ml. PhNCO by the method described for the 1,2-dimethyl deriv. II (0.5 g.) and 0.45 ml. PhNC refluxed 6 hrs. in 6 ml. CHC13 afforded on work-up 0.1 g. IX, m. 200-1.degree. To 3 suspension of 0.5 g. II in 50 ml. lquid NiB was added 0.12 g. NaMH2 followed by 0.35 g. iso-CSHIIONO, the mixt. was maintained at -50 to -60.degree. for 30 min. then held at its b.p. 2 hrs., the NH3 was boiled off, the residue was dissolved in H2O, and 0.4 g. 2 (hydroxyiminomethyl)-1 methylbenzimidazole 3-oxide, m. 266.degree. (decompn.) was pptd. by addin. of AcOH. The BF3 complex of I, m. 206-8.degree., was obtained in 0.45 g. yield when a CHC13 soln. of 0.4 g. II was treated dropwise with 0.5 ml. BF3.EZO complex.

14433-25-1 FR NS (Synthetic preparation); PREP (Preparation) (prepn. of)

14433-25-1 (CA INDEX NAME)
                                                    CM 1
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CRN 88-89-1 CHF C6 H3 N3 O7

NO2

CH 3 CRN 46805-03-2 CMF C14 H14 N3

CRN 49730-59-8 CMF C14 H14 N3 . C6 H2 N3 07

NO2 2 CH

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L6 ANSWER 30 OF 32 CAPLUS COPYRIGHT 2003 ACS

CM 4

CRN 14798-26-6 CMF C6 H2 N3 O7

ANSWER 31 OF 32 CAPLUS COPYRIGHT 2003 ACS (Continued) hrs. at 70.degree. dild. with H2O, and basified with aq. Na2CO3 gave 11.2 g. 1-piperidino-Z-methylthio-2, 2-dicyanoethylene, m. 93-5.degree. (MeCH). IV (29.8 g.), 140 cc. dry C6H6, and 6.6 g. CH2(CN)2 treated dropwise with 10.1 g. Exist and heated 4 hrs. at 40.degree. Yelledry. Ph2W(MeS)CCC(CN)2, m. 133-4.degree. At 40.degree. Yelledry. Ph2W(MeS)CCC(CN)2, m. 133-4.degree. At 60.degree. Yelledry. 11.4 d. g.), 80 g. dry CSH5N, and 20 gr. at 92 yelledry. Ph2W(MeS)CCC(CN)2, m. 134-4.degree. At 60.degree. Gild. with H2O, and basified value of the season of the se

ACCESSION NUMBER: 1965:90891 CAPLUS
COCUMENT NUMBER: 62:90891 CAPLUS
COCUMENT NUMBER: 62:90891 CAPLUS
COCUMENT NUMBER: 62:16230b-h.16231a-g
Synthesis and reactions of mercaptoformamide chlorides
ALTHONG(S): Bilingrield, Heinz: Moebius, Leander
Badische Anilin-Soda-Fabrik A.-G., Ludwigshafen,
Germany
COCUMENT TYPE: Journal
LANGUAGE: Chem. Ber. (1965), 98(4), 1293-307
DOCUMENT TYPE: Journal
LANGUAGE: Chem. Ber. (1965), 98(4), 1293-307
DOCUMENT TYPE: Journal
LANGUAGE: Germany
GI For diagram(s), see printed CA Issue.
AB The chlorination of N.N-disubstituted dithiocarbamates, RR'NCSR'' (I)
yielded in a general reaction the corresponding II which are valuable
intermediates for the syntheses of thiocarbamidate O- and S-esters,
isothhoureas, ketnes S,N-acetals, 1,3,4-and 1,2,4-oxadiazoles,
1,3,4-thiadiazoles, 1,2,4-triazoles, benzimidazoles, benzoxazoles, and
benzothiazoles. The formation of the 1,3,4-oxadiazoles served as an
example to demonstrate that, depending on the basicity of the solvent
used, either N- or S-functional heterocycles can be obtained. The
appropriate I (I mole) in an inert solvent treated at 20-30.degre with
at least 1.5-2 moles COCI2, kept several hrs. at room temp., and dild.
with Et2O yielded the corresponding, strongly hygroscopic II for mps. of
which are not characteristic. In this manner were propty the Clubung II
(R, N', R'', and tyield given): Me, Me, Me SII, Me, Me, CLECE, 99; Me,
Me, P-McCEM4, 95; Me, Me, McOZC, 72; P., CCCHZCH, Me, Me, CLECE, 99; Me,
Me, P-McCEM4, 95; Me, Me, McOZC, 72; P., CCCHZCH, Wei, Me, M. CLECCE, 99; Me,
Me, To (unstable): Ph, Ne (Una) 1; Yield given): Me (V, 97); Bu, 94;
Cyclobexyl, (VI) 52; PhCM(VII), 56; NCCHZCH2 (VIII), 100; NCCHZL2); GIX),
G7; McOZCHZCHZ (XI), 97; Me, McCCM-McH2, 81. In the same manner was prepd
the morpholino analog of VIII in 93t yield. 2-Thioxo-3-methylthiazolidine
(XI) (39-9; 9.) in 20 cc. dry CGM Me), treated 2 hrs. vith COCI2 and kept 16
hrs. at room temp.

G4-70.degree. (Di.5) 19.1 degree. (Ph. Me), Me, 99, 99-9, degree. (Di.5) MeNM, Me

ANSWER 31 OF 32 CAPLUS COPYRIGHT 2003 ACS (Continued)
(MeCN), 67, 75.degree.; 5-Me deriv. of XXV, 260-2.degree. (MeCCH2CH2OH), 64,
65.degree.; 4,5-phthaloyl deriv. of XXV, 260-2.degree. (MeCCH2CH2OH), 55,
65.degree.; 4,5-phthaloyl deriv. of XXIV, 298-300.degree. (PhNO2), 57,
65.degree. The appropriate onacron-aminophenol (0.1 mole) and
0.11-0.12 mole suitable II in 100-150 cc. dry CSHSN heated at 70.degree.
yielded the corresponding benzowazole. In this manner were prepd. the
following compds. (mp., % yield, and reaction time in hrs. given):
2-piperidinobenzowazole (XVVI), 70-1.degree. (ptc. ether), 55, 7; 5-NO2
deriv. of XVVI (yellow-brown), 120-2.degree. (MeCN), 67, 4;
4.5-phthaloyl deriv. of XXVI, 209-10.degree. (MeCM2CH2OH), 85, 3 (2 hrs.
at 90.degree.); 5,6-phthaloyl deriv. of XXVI, 258-60.degree.
(MeCM2CH2OH2OH), 90, 7. comicron.-HXNCSH4SH.HCI (9.7 g), 70 cc. dry CSHSN,
and 16.5 g. VIII heated 5 hrs. at 65.degree. gave 6.6 g.
2-piperidinobenzothiazole (XXVII), m. 92.degree. (MeCN).
2-Amino-1-mercaptoanthraquinone (25.5 g.), 100 cc. dry CSHSN, and 35 g.
VIII heated 3 hrs. at 70.degree. and 2 hrs. at 90.degree. gave 28.1 g.
6,7-phthaloyl deriv. of XXVII, orange-yellow, m. 216-17.degree.
(MeCCM2CH2OH). 2. 4-HZN (CN) CGH3OH (15.4 g.), 100 cc. XIX, and 22 g. V
heated 4 hrs. at 65.degree. gave 11.5 g. 5-nitro-2-methylthiobenzowazole,
m. 161.degree. (MeCN). 2-Amino-3-hydroxynathraquinone (23.9 g.), 80 cc.
XIX, and 19.2 g. III heated 5 hrs. at 70.degree gave 11.8 g.
2-methylthio-5,6-phthaloylbenzowazole, m. 228.degree. (MeCCH2CH2OH).
3013-04-5, 2-Benzimidazolemethanol, 1-methyl-.alpha.-piperidino(prepn. of)
3013-04-5 CAPLUS
2-Benzimidazolemethanol, 1-methyl-.alpha.-piperidino(7CI, 8CI) (CA

2-Benzimidazolemethanol, 1-methyl-.alpha.-piperidino- (7CI, 8CI) (CA INOEX NAME)

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L6 ANSWER 32 OF 32 CAPLUS COPYRIGHT 2003 ACS ACCESSION NUMBER: 1965:90890 CAPLUS GORIGINAL REFERENCE NO: 62:16229b-h,16230a-b Enzimidazole-Z-carboxal Hensel, Hans R. CORPORATE SOURCE: Bedische Anilin-Soda-Fat

62:16229b-h, 162:30a-b Benzimidazole-2-carboxaldehyde Hensel, Hans R. Badische Anilin-Soda-Fabrik A.-G., Ludwigshafen,

Germany Chem. Ber. (1965), 98(4), 1325-34

SOURCE: DOCUMENT TYPE:

CORPORATE SOURCE:

Badische Anilin-Soda-Fabrik A.-G., Ludwigshafen, Germany
Chem. Ber. (1965), 98 (4), 1325-34

Journal
German
German
GI For diagram(s), see printed CA Issue.
German
GI For diagram(s), see printed CA Issue.
Benzimidazole-2-carboxaldehydes with unsubstituted imide-H yielded by reaction with alighatic and cycloalighatic secondary amines cryst. compds. which can be regarded as animals with a pentacyclic structure.
Benzimidazole-2-carboxaldehydes (1) in comparison with its N-Me deriv. (II) appears to exist in the cyclic semiaminal structure III.
.omicron.-GGH (NH2)2 (IV) (21.6 g.) and \$2 g. (Buo)2CNCO2Bu added to 9 g.
Na in 250 cc. abs. EVOH, distd. to dryness, and heated 2 hrs. at 150.degree. yielded 35 g. dibutyl acetal of I. m. 128.degree. (EtOH). The diethyl acetal of I, m. 731.degree. New 19 proposed (EtO)2CHCO2Et. IV (324 g.) in 2.7 l. 20 HCl refluxed 20 hrs. with \$16 g. (EtO)2CHCO2Et. IV (324 g.) in 2.7 l. 20 HCl refluxed 20 hrs. with \$16 g. (EtO)2CHCO2Et. IV (324 g.) in 2.7 l. 20 HCl refluxed 20 hrs. with \$16 g. (EtO)2CHCO2Et. IV (324 g.) in 2.7 l. 20 HCl refluxed 20 hrs. with \$16 g. (EtO)2CHCO2Et. IV (324 g.) in 2.7 l. 20 HCl refluxed 20 hrs. with \$16 g. (EtO)2CHCO2Et. IV (324 g.) in 2.7 l. 20 HCl refluxed 20 hrs. with \$16 g. (EtO)2CHCO2Et. IV (324 g.) in 2.7 l. 20 HCl refluxed 20 hrs. with \$16 g. (EtO)2CHCO2Et. IV (324 g.) in 2.7 l. 20 HCl refluxed 20 hrs. with \$16 g. (EtO)2CHCO2Et. IV (324 g.) in 2.7 l. 20 HCl refluxed 30 hrs. hydrolysis of V.HCl with excess ag. AcONs at pl 6 and 80-90.degree. with \$18 yellow 20 hrs. with \$10 cc. HCOMM2 and 100 cc. 400 kg Mahs303, and dild. with \$50 cc. hot H20 gave 35 g. VI, sinters at 195-200.degree. without melting. VI dissolved in ag. NaOH and acidified gave 1, m. 224.degree. XCN g.s. and 5.5 g. KCN in \$50 cc. 50 EEOH keated 10 m.in. on a steam bath gave 1 (2.9 g.) in 50 cc. HCOMM2 treated dropwise at 80-100.degree. with ag. XCN gave 2.5 g. deep yellow VII (R = H) (VIII), m. 217.degree. VI (12.5 g.) and 5.5 g. KCN in 50 cc. 50 EEOH heated 10 m.in. on

ANSWER 32 OF 32 CAPLUS COPYRIGHT 2003 ACS (Continued) cc. H20 treated with 17.5 cc. N HCl gave 3 g. free acid, m. 170.degree. (decompn.), which treated with 200 cc. CH2N2-Et20 from 7 g. H2NCOMMeNO gave the Me ester. m. 88.degree. (CGH6-cyclohexane) XII (15.4 g.) in 300 cc. tetrahydrofuran hydrogenated 2 hrs. at 25.degree. over 25% Pd-BaS04 yielded 15 g. 2-dibutylaminomethylbenzimidazole, m. 133.degree., also obtained from 4.5 g. 2-chloromethylbenzimidazole, m. 133.degree., also obtained from 4.5 g. 2-chloromethylbenzimidazole and 10 g. BuzNm in 30 cc. Et0H during 2 hrs. at 50-60.degree. XIII (10 g.) in 200 cc. 1:1 MeOH-tetrahydrofuran hydrogenated 30 min. over 15 g. 5 Pd-BaS04 yielded 10 g. 2-pyrrolidinomethylbenzimidazole (XIV), m. 144.degree.. I (35 g.) in 200 cc. pyrrolidine hydrogenated at 40-50.degree./20 atm. over Raney Ni yielded 32 g. XIV. omicron.-MeNHCGH4NHZ (61 g.) and 38 g. tartaric acid refluxed 2 days in 250 g. 40 H2504 gave 71 g. bis(N-methyl-2-benzimidazolyl) glycol (XV), m. 261.degree. XV (64.4 g.), 200 cc. AcOH, and 400 cc. CGH6 treated with stirring at 0-5.degree. during 1 hr. with 100 g. Pb(Ac)4 and stirred 2 hrs. at room temp. yielded 54.5 g. II, m. 123.5.degree. (cyclohexane); oxime m. 223-4.degree. (30% EtCH3) thiosemicarbazone m. 256.degree. (decompn.) (5:1 HCONNe2-H2O). Ag20 from 17 g. AgNO3 and 8 g. NaOH in 250 cc. H2O added in portions with stirring at 0-5.degree. to 8 g. II and kept overnight yielded 6.7 g. Na salt of N-methylbenzimidazole-2-carboxylic acid. II (2.4 g.) in 150 cc. Et20 treated with shaking with 2 cc. piperidine and kept 10 min. yielded 3.5 g. piperidino-N-methyl-2-benzimidazolylcarbinol (XVI), m. 108.degree. (1:5 EtCH-H2O). II with pyrrolidine in Et20 gave similarly the pyrrolidino analog of XVI, m. 99-100.degree. The ir spectra of I (III) and II are recorded. 3013-04-5 CAPUS

09994012 Page 30 01/28/2003

| => log y COST IN U.S. DOLLARS | SINCE FILE ENTRY | TOTAL SESSION |
|--|---------------------|------------------|
| FULL ESTIMATED COST | 146.82 | 331.28 |
| DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS) | SINCE FILE ENTRY | TOTAL SESSION |
| CA SUBSCRIBER PRICE | -20.83 | -20.83 |

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Inventor Name Search Result

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Last Name = SIN First Name = NY

| Application# | Patent# | Status | Date Filed | Title | Inventor Name |
|--------------|--------------------------|--------|------------|--|---------------|
| 09569748 | Not Issued | | | ENZYME INHIBITION | SIN, NY |
| 60263363 | Not Issued | 020 | 01/22/2001 | IMIDAZOPYRIDINE AND IMIDAZOPYRIMIDINE ANTIVIRAL AGENTS | SIN, NY |
| 09840279 | 6489338 | 150 | 04/23/2001 | IMIDAZOPYRIDINE AND IMIDAZOPYRIMIDINE ANTIVIRAL AGENTS | SIN, NY |
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| 09994012 | Not Issued | 071 | 11/16/2001 | HETEROCYCLIC SUBSTITUTED 2-METHYL- BENZIMIDAZOLE ANTIVIRAL AGENTS | SIN, NY |
| 60382055 | Not 020 05/20/200 Issued | | 05/20/2002 | HEPATICS C VIRUS INHIBITORS | SIN, NY |
| 60257139 | Not Issued | 020 | 12/20/2000 | HETEROCYCLIC SUBSTITUTED 2-METHYL- BENZIMIDAZOLE ANTIVIRAL | SIN, NY |

Inventor Search Completed: No Records to Display.

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Inventor Name Search Result

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Last Name = WANG

First Name = XIANGDONG

| | | | | | T Nome |
|--------------|---------------|-----|------------|---|--------------------|
| Application# | Patent# | | | 1100 | Inventor Name |
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| 60339025 | Not Issued | 020 | 12/10/2001 | SUBSTITUTED 2-METHYL- BENZIMIDAZOLE RESPIRATORY SYNCYTIAL VIRUS ANTIVIRAL AGENTS | WANG, XIANGDONG |
| 10309505 | Not Issued | 019 | 12/04/2002 | SUBSTITUTED 2-METHYL- BENZIMIDAZOLE RESPIRATORY SYNCYTIAL VIRUS ANTIVIRAL AGENTS | WANG, XIANGDONG |

Inventor Search Completed: No Records to Display.



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Inventor Name Search Result

Your Search was:

Last Name = MEANWELL First Name = NICHOLAS

| Application# | Patent# | Status | Date Filed | Title | Inventor Name |
|-----------------|---------------|--------|------------|--|---------------------------|
| <u>07580021</u> | Not Issued | | | OXAZOLE DERIVATIVES | MEANWELL , NICHOLAS A. |
| 08047738 | 5362879 | 150 | 04/15/1993 | | MEANWELL , NICHOLAS A. |
| 08477047 | 5565483 | 150 | 06/07/1995 | D CODDITION STATE | MEANWELL , NICHOLAS A. |
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| 07863278 | 5158958 | | | IMIDAZO[4,5B]QUINOLINYL OXY ALKYL SULFONYL PIPERIDINE DERIVATIVES | MEANWELL , NICHOLAS A. |
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| | | | | OXAZOLES AS PLATELET AGGREGATION INHIBITORS | NICHOLAS A. |
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| 07387749 | Not Issued | 164 | 07/31/1989 | ARYLPYRAZOLE DERIVATIVES AS ANTI-PLATELET AGENTS | MEANWELL , NICHOLAS A. |
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| 60235804 | Not Issued | 020 | 09/27/2000 | BENZIMIDAZOLONE ANTIVIRAL AGENTS | MEANWELL, NICHOLAS A |
| 60211900 | Not Issued | 020 | 06/16/2000 | DIOXOBUTYRIC ACID DERIVATIVES | MEANWELL, NICHOLAS A. |
| 60266183 | Not Issued | 020 | 02/02/2001 | COMPOSITION AND ANTIVIRAL ACTIVITY OF SUBSTITUTED AZAINDOLEOXOACETIC PIPERAZINE DERIVATIVES | MEANWELL, NICHOLAS A. |
| 60263363 | Not Issued | 020 | 01/22/2001 | IMIDAZOPYRIDINE AND IMIDAZOPYRIMIDINE ANTIVIRAL AGENTS | MEANWELL, NICHOLAS A. |
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| | | | | IMIDAZOPYRIMIDINE ANTIVIRAL AGENTS | NICHOLAS A. |
| 60286347 | Not Issued | 020 | | INDOLE, AZAINDOLE AND RELATED HETEROCYCLIC AMIDOPIPERAZINE DERIVATIVES | MEANWELL, NICHOLAS A. |
| 60356977 | Not Issued | 020 | | INDOLE, AZAINDOLE AND RELATED HETEROCYCLIC PYRROLIDINE DERIVATIVES | MEANWELL, NICHOLAS A. |
| 60314406 | Not Issued | 020 | | COMPOSITION AND ANTIVIRAL ACTIVITY OF SUBSTITUTED AZAINDOLEOXOACETIC PIPERAZINE DERIVATIVES | MEANWELL, NICHOLAS A. |
| 09952736 | 6506738 | 150 | 09/14/2001 | BENZIMIDAZOLONE ANTIVIRAL AGENTS | MEANWELL, NICHOLAS A. |
| 10027612 | Not Issued | 090 | 12/19/2001 | COMPOSITION AND ANTIVIRAL ACTIVITY OF SUBSTITUTED INDOLEOXOACETIC PIPERAZINE DERIVATIVES | MEANWELL, NICHOLAS A. |
| 10038306 | Not Issued | 030 | 01/02/2002 | COMPOSITION AND ANTIVIRAL ACTIVITY OF SUBSTITUTED AZAINDOLEOXOACETIC PIPERAZINE DERIVATIVES | MEANWELL, NICHOLAS A. |
| 60257278 | Not Issued | 020 | 12/20/2000 | SUBSTITUTED BENZIMIDAZOLE AND AZABENZIMIDAZOLE PIPERAZINE DERIVATIVES | MEANWELL, NICHOLAS A. |
| 09538520 | 6271249 | 150 | 03/29/2000 | DIPHENYL OXADIAZOLONES AS POTASSIUM CHANNEL MODULATORS | MEANWELL, NICHOLAS A. |
| 09765189 | Not Issued | 161 | 01/18/2001 | ANTIVIRAL AZAINDOLE DERIVATIVES | MEANWELL, NICHOLAS A. |
| 60265978 | Not Issued | 020 | 02/02/2001 | COMPOSITION AND ANTIVIRAL ACTIVITY OF SUBSTITUTED INDOLEOXOACETIC PIPERAZINE DERIVATIVES | MEANWELL, NICHOLAS A. |
| 60184004 | Not Issued | 159 | 02/22/2000 | ANTIVIRAL AZAINDOLE DERIVATIVES | MEANWELL, NICHOLAS A. |
| 60383509 | Not Issued | 020 | 05/28/2002 | INDOLE, AZAINDOLE AND RELATED HETEROCYCLIC 4- ALKENYL PIPERIDINE AMIDES | MEANWELL, NICHOLAS A. |
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| 60376731 | Not Issued | 020 | 05/01/2002 | BICYCLO 4.4.0 ANTIVIRAL DERIVATIVES | MEANWELL, NICHOLAS A. |
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| 10289829 | Not Issued | 020 | 11/07/2002 | SUBSTITUTED BENZIMIDAZOLE ANTIVIRAL AGENTS | MEANWELL, NICHOLAS A. |
| 10268350 | Not Issued | 020 | | ANTIVIRAL AZAINDOLE DERIVATIVES | MEANWELL, NICHOLAS A. |
| 10254365 | Not Issued | 040 | 09/25/2002 | HIV INTEGRASE INHIBITORS | MEANWELL, NICHOLAS A. |
| 10214982 | Not Issued | 020 | 08/07/2002 | COMPOSITION AND ANTIVIRAL ACTIVITY OF SUBSTITUTED AZAINDOLEOXOACETIC PIPERAZINE DERIVATIVES | MEANWELL, NICHOLAS A. |
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| 60211447 | Not Issued | 020 | 06/13/2000 | IMIDAZOPYRIDINE AND IMIDAZOPYRIMIDINE ANTIVIRAL AGENTS | MEANWELL, NICHOLAS A. |
| 60217444 | Not Issued | 020 | 07/10/2000 | COMPOSITION AND ANTIVIRAL ACTIVITY OF SUBSTITUTED INDOLEOXOACETIC PIPERAZINE DERIVATIVES | MEANWELL, NICHOLAS A. |
| 60217448 | Not Issued | 020 | 07/10/2000 | COMPOSITION AND ANTIVIRAL ACTIVITY OF SUBSTITUTED AZAINDOLEOXOACETIC PIPERAZINE DERIVATIVES | MEANWELL, NICHOLAS A. |
| 09883902 | Not Issued | 161 | 06/18/2001 | HIV INTEGRASE INHIBITORS | MEANWELL, NICHOLAS A. |
| 09888686 | Not Issued | 161 | 06/25/2001 | COMPOSITION AND ANTIVIRAL ACTIVITY OF SUBSTITUTED INDOLEOXOACETIC PIPERAZINE DERIVATIVES | MEANWELL, NICHOLAS A. |

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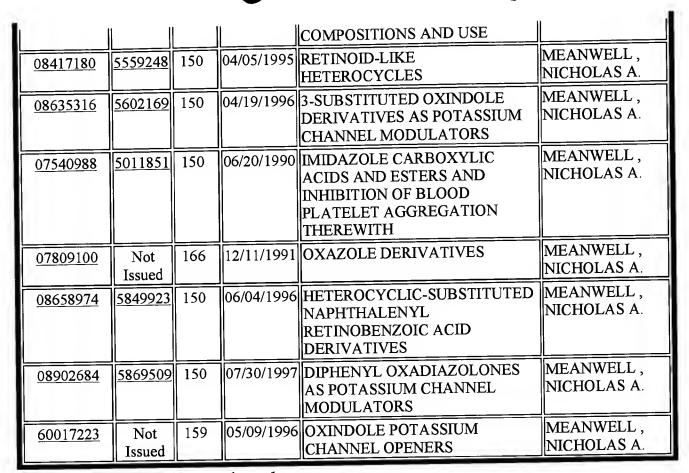
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Last Name = MEANWELL First Name = NICHOLAS

| Application# | Patent# | Status | Date Filed | Title | Inventor Name |
|--------------|---------------|--------|------------|---|---------------------------|
| 08092402 | 5380854 | = | 07/14/1993 | | MEANWELL , NICHOLAS A. |
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| 09166273 | 5922735 | 150 | 10/05/1998 | 4-ARYL-3-HYDROXYQUINOLIN- 2-ONE DERIVATIVES AS ION CHANNEL MODULATORS | MEANWELL , NICHOLAS A. |
| 60093387 | Not Issued | 159 | 07/20/1998 | SUBSTITUTED BENZIMIDAZOLE ANTIVIRAL AGENTS | MEANWELL , NICHOLAS A. |
| 06866813 | 4775674 | 150 | 05/23/1986 | IMIDAZOQUINOLINYLETHER DERIVATIVES USEFUL AS PHOSPHODIESTERASE AND BLOOD PLATELET AGGREGATION INHIBITORS | MEANWELL , NICHOLAS A. |
| 06883258 | 4701459 | 150 | 07/08/1986 | 7- AMINO-13- DIHYDRO-2H- IMIDAZO [4,5-6] QUINOLIN2- ONES AND MEATHOD FOR INHIBITING PHOS PHODIESTERASE AND BLOOD PLATELET AGGREGATIN | MEANWELL , NICHOLAS A. |
| 07430228 | 4943573 | 150 | 11/01/1989 | IMIDAZO(4,5-B) QUINOLINYLOXYALKANOIC ACID AMIDES WITH ENHANCED WATER SOLUBILITY | MEANWELL , NICHOLAS A. |
| 07453548 | Not Issued | 161 | 12/20/1989 | OXAZOLE DERIVATIVES | MEANWELL , NICHOLAS A. |
| 08114262 | 5348960 | 150 | 08/30/1993 | IMIDAZO[4,5-B] QUINOLINYL | MEANWELL, |

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| | | | | OXY ALKYL TETRAZOLYL PIPERIDINE DERIVATIVES | NICHOLAS A. |
| 09197887 | 6077861 | 150 | | DH IIDI II D XI CI II C | MEANWELL , NICHOLAS A. |
| 06913041 | Not Issued | 161 | | | MEANWELL , NICHOLAS A. |
| 07479505 | 4956379 | 150 | 02/13/1990 | I TREE OBB CITE CITE | MEANWELL , NICHOLAS A. |
| 07479506 | Not Issued | 164 | 02/13/1990 | IMIDAZOLE CARBOXYLIC ACIDS AND ESTERS AND INHIBITION OF BLOOD PLATELET AGGREGATION THEREWITH | MEANWELL , NICHOLAS A. |
| 07479507 | 5034409 | 150 | 02/13/1990 | PYRROLE CARBOXYLIC ACIDS AND ESTERS FOR BLOOD PLATELET AGGREGATION INHIBITION | MEANWELL , NICHOLAS A. |
| 07479508 | 4992439 | 150 | 02/13/1990 | PYRIDAZINE CARBOXYLIC ACIDS AND ESTERS | MEANWELL , NICHOLAS A. |
| 07479559 | 4956376 | 150 | 02/13/1990 | TETRAZOLE CARBOXYLIC ACIDS AND ESTERS AND INHIBITION OF BLOOD PLATELET AGGREGATION THEREWITH | MEANWELL , NICHOLAS A. |
| 07479560 | 5077305 | 150 | 02/13/1990 | THIAZOLE CARBOXYLIC ACIDS AND ESTERS | MEANWELL , NICHOLAS A. |
| 07479561 | 4983610 | 150 | 02/13/1990 | PYRIMIDINE CARBOXYLIC ACIDS AND ESTERS | MEANWELL , NICHOLAS A. |
| 07479563 | 5021415 | 150 | 02/13/1990 | TRIAZINE CARBOXYLIC ACIDS AND ESTERS | MEANWELL , NICHOLAS A. |
| 07479564 | 4970225 | 150 | 02/13/1990 | IMIDAZOLIDINE CARBOXYLIC ACIDS AND ESTERS AS BLOOD PLATLET AGGREGATION INHIBITORS | MEANWELL , NICHOLAS A. |
| 06726869 | Not Issued | 161 | | IMIDAZOQUINOLINE ANTITHROMBOGENIC CARDIOTONIC AGENTS | MEANWELL , NICHOLAS A. |
| 07523637 | 4994482 | 150 | 05/10/1990 | ARYLPYRAZOLE DERIVATIVES AS ANTI-PLATELET AGENTS, | MEANWELL , NICHOLAS A. |



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| Application# | Patent# | Status | Date Filed | Title | Inventor Name |
|--------------|---------------|---------------|------------|--|------------------------|
| | 6489338 | $\overline{}$ | 04/23/2001 | IMIDAZOPYRIDINE AND | VENABLES, BRIAN LEE |
| 09994012 | Not Issued | 071 | 11/16/2001 | | VENABLES, BRIAN LEE |
| 60257139 | Not Issued | 020 | 12/20/2000 | HETEROCYCLIC SUBSTITUTED 2-METHYL- BENZIMIDAZOLE ANTIVIRAL AGENTS | VENABLES, BRIAN LEE |

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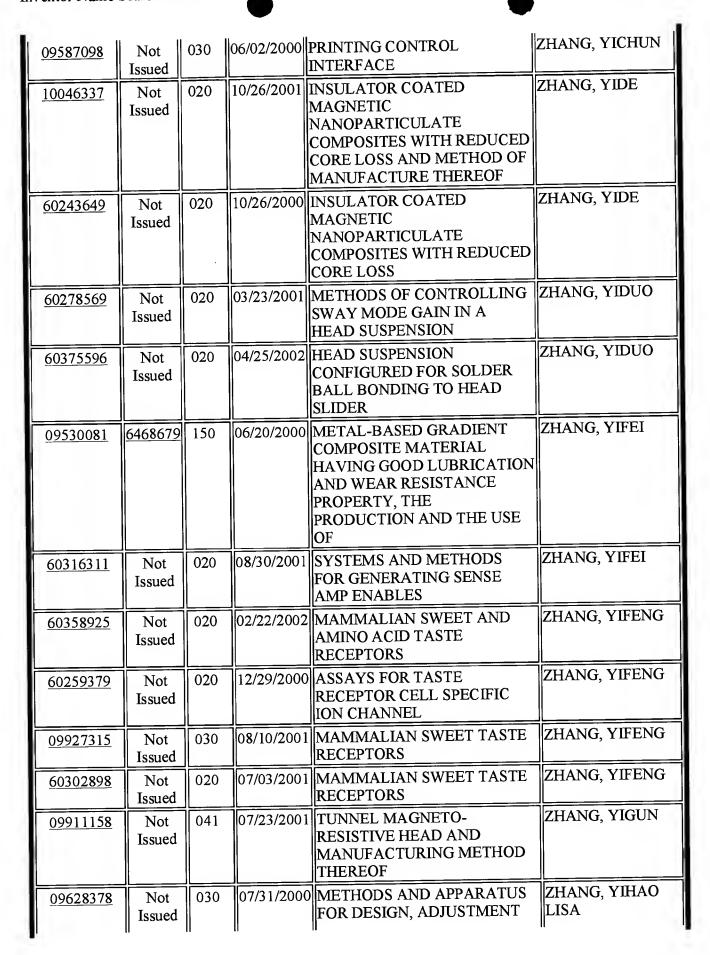
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Inventor Name Search Result

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|--------------|---------------|--------|------------|--|---------------|
| Application# | Patent# | Status | | 1100 | Inventor Name |
| 09585382 | 6413223 | 150 | 06/01/2000 | CUFFLESS CONTINUOUS BLOOD PRESSURE MONITOR | ZHANG, YI |
| 09593822 | Not Issued | 160 | 06/13/2000 | PACKETIZED COMMUNICATIONS APPARATUS AND METHOD | ZHANG, YI |
| 09593732 | Not Issued | 030 | 06/13/2000 | COMPUTER NETWORK- BASED TELEPHONE SWITCHING METHOD AND APPARATUS | ZHANG, YI |
| 09860840 | Not Issued | 041 | 05/18/2001 | MAGE-A3 PEPTIDES PRESENTED BY HLA CLASS II MOLECULES | ZHANG, YI |
| 09593821 | Not Issued | 030 | | COMPUTER NETWORK- BASED AUTO-ATTENDANT METHOD AND APPARATUS | ZHANG, YI |
| 09871182 | Not Issued | 030 | 05/31/2001 | IMAGE ANALYZING METHOD FOR DETECTING SIGNIFICANT CHANGES IN A TIME SEQUENCE OF IMAGES | ZHANG, YI |
| 09672171 | Not Issued | 071 | 09/27/2000 | UNIVERSAL INTERFACE FOR VOICE ACTIVATED ACCESS TO MULTIPLE INFORMATION PROVIDERS | ZHANG, YI |
| 60235804 | Not Issued | 020 | 09/27/2000 | BENZIMIDAZOLONE ANTIVIRAL AGENTS | ZHANG, YI |
| 09952736 | 6506738 | 150 | 09/14/2001 | BENZIMIDAZOLONE ANTIVIRAL AGENTS | ZHANG, YI |
| 60244073 | Not Issued | 020 | 10/26/2000 | HIGH CAPACITY STORAGE DEVICE PLAYER | ZHANG, YI |
| 60371148 | Not Issued | 020 | 04/10/2002 | OPTICAL FIBER SINGLE- CRYSTAL SAPPHIRE HIGH TEMPERATURE SENSING INSTRUMENT | ZHANG, YIBING |



| | | | | OR OPERATION OF WIRELESS NETWORKS USING PRE- FREQUENCY-ASIGNMENT OPTIMIZATION | |
|----------|---------------|-----|------------|--|----------------------|
| 09626427 | Not Issued | 030 | | ROUTING IN INFORMATION NETWORKS OVER PATHS HAVING PERFORMANCE- DEPENDENT COSTS | ZHANG, YIHAO LISA |
| 09628366 | Not Issued | 030 | | | ZHANG, YIHAO LISA |
| 09626268 | 6245520 | 150 | | METHODS FOR INTRODUCING NUCLEIC ACIDS INTO MAMMALIAN CELLS USING IMIDAZOLIUM LIPIDS | ZHANG, YILIN |
| 09601378 | 6293454 | 150 | 07/26/2000 | INSTALLATION FOR POSITIONING AND WELDING BODY PARTS OF DIFFERENT TYPES OF MOTOR VEHICLES | ZHANG, YIMIN |
| 09896959 | Not Issued | 030 | 06/29/2001 | FAILOVER MANAGEMENT SYSTEM | ZHANG, YIMING |
| 09850984 | 6445142 | 150 | 05/08/2001 | APPARATUS AND METHOD FOR REMOTELY DETECTING A MAGNETIC BALLAST | ZHANG, YIN |
| 09567705 | 6420274 | 150 | 05/10/2000 | METHOD FOR CONDITIONING PROCESS CHAMBERS | ZHANG, YING |
| 09847479 | Not Issued | 041 | 05/02/2001 | GATE LINEWIDTH TAILORING AND CRITICAL DIMENSION CONTROL FOR SUB-100 NM DEVICES USING PLASMA ETCHING | ZHANG, YING |
| 60220840 | Not Issued | 020 | 07/26/2000 | USE OF ANTIHELMINTIC DRUG NICLOSAMIDE FOR TREATMENT OF TUBERCULOSIS AND OTHER MYCOBACTERIAL INFECTIONS | ZHANG, YING |
| 09874348 | Not Issued | 030 | 06/04/2001 | SWITCHING OF MULTIPLE CLASSES OF SYNCHRONOUS DATA TRAFFIC | ZHANG, YING |
| 09902727 | Not Issued | 030 | 07/12/2001 | LATERAL-ONLY PHOTORESIST TRIMMING | ZHANG, YING |

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| | | | | FOR SUB-80 NM GATE STACK | |
| 09874352 | Not Issued | 071 | 06/04/2001 | CONCURRENT SWITCHING OF SYNCHRONOUS AND ASYNCHRONOUS TRAFFIC | ZHANG, YING |
| 09736877 | 6518136 | 150 | 12/14/2000 | SIDEWALL PROCESS AND RAPID THERMAL SPIKE ANNEALING FOR ADVANCE CMOS FABRICATION | ZHANG, YING |
| 60294602 | Not Issued | 020 | 06/01/2001 | RESUSCITATION OF DORMANT MYCOBACTERIUM TUBERCULOSIS BY PHOSPHOLIPIDS OR SPECIFIC PEPTIDES | ZHANG, YING |
| 09745953 | Not Issued | 041 | 12/21/2000 | SOLID STATE GLASS CONSTITUENT DELIVERY SYSTEM | ZHANG, YING- HUA |
| 10113790 | Not Issued | 030 | 03/29/2002 | FUSION PROTEINS FOR SPECIFIC TREATMENT OF CANCER AND AUTOIMMUNE DISEASES | ZHANG, YING- HUI |
| 60236117 | Not Issued | 020 | 09/28/2000 | DELIVERY METHOD FOR THE TUMOR SPECIFIC APOPTOSIS INDUCING ACTIVITY OF APOPTIN | ZHANG, YING- HUI |
| 09672584 | Not Issued | 161 | 09/28/2000 | EVOLUTION OF WHOLE CELLS AND ORGANISMS BY RECURSIVE SEQUENCE RECOMBINATION | ZHANG, YING- XIN |
| 09617847 | Not Issued | 121 | 07/17/2000 | PIGMENTED COATINGS FOR CERAMIC SUBSTRATES | ZHANG, YINGCHAO |
| 10123131 | Not Issued | 030 | 04/17/2002 | UPLINK POWER CONTROL ALGORITHM | ZHANG, YINGLU |
| 09911014 | Not Issued | 095 | 07/23/2001 | MATRIX METALLOPROTEINASE INHIBITORS AND METHOD OF USING SAME | ZHANG, YINGSHENG |
| 09689225 | Not Issued | 030 | 10/10/2000 | METHOD AND APPARATUS FOR MONITORING DYNAMIC CARDIOVASCULAR FUNCTION USING N- DIMENSIONAL REPRESENTATIONS OF CRITICAL FUNCTIONS | ZHANG, YINQI |

| 09689206 | Not Issued | 071 | | METHOD AND APPARATUS FOR MONITORING DYNAMIC SYSTEMS USING AN INTEGRATED GRAPHIC DISPLAY FOR THE N- DIMENSIONAL REPRESENTATIONS OF CRITICAL FUNCTIONS | ZHANG, YINQI |
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| 60224326 | Not Issued | 020 | 08/11/2000 | METHOD OF TREATING ESTROGEN RECEPTOR POSITIVE CARCINOMA | ZHANG, YIXIAN |
| 09923217 | 6511986 | 150 | | METHOD OF TREATING ESTROGEN RECEPTOR POSITIVE CARCINOMA | ZHANG, YIXIAN |
| 09635864 | Not Issued | 041 | 08/10/2000 | OB POLYPEPTIDES, MODIFIED FORMS AND DERIVATIVES | ZHANG, YIYING |

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| Application# | Patent# | | | | Inventor Name | | |
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| 09978613 | Not Issued | 041 | 10/16/2001 | SYSTEM AND METHOD FOR ORTHOGONAL INDUCTANCE VARIATION | ZHANG, YI | | |
| 09994012 | Not Issued | 071 | 11/16/2001 | HETEROCYCLIC SUBSTITUTED 2-METHYL- BENZIMIDAZOLE ANTIVIRAL AGENTS | ZHANG, YI | | |
| 60394141 | Not Issued | 020 | 07/05/2002 | ELECTROCHEMICAL WHITTLING OF ORGANIC NANOSTRUCTURES | ZHANG, YI | | |
| 09738629 | Not Issued | 030 | 12/14/2000 | PACKETIZED COMMUNICATIONS APPARATUS AND METHOD | ZHANG, YI | | |
| 10164121 | Not Issued | 030 | 06/05/2002 | ISOLATED PEPTIDES WHICH BIND TO HLA-CW6 MOLECULES AND USES THEREOF | ZHANG, YI | | |
| 09721831 | Not Issued | 019 | 10/12/2000 | UNIVERSAL INTERFACE FOR VOICE ACTIVATED ACCESS TO MULTIPLE INFORMATION PROVIDERS | ZHANG, YI | | |
| 10003676 | Not Issued | 041 | 10/31/2001 | LIMITING UNWANTED INK PENETRATION OF FLEXIBLE CIRCUITS OF FLUID EJECTION DEVICES | ZHANG, YI | | |
| 09531072 | Not Issued | 161 | 03/18/2000 | VOICE COIL ACTUATABLE OPTICAL SWITCHES AND METHOD | ZHANG, YI | | |
| 60257139 | Not Issued | 020 | 12/20/2000 | HETEROCYCLIC SUBSTITUTED 2-METHYL- BENZIMIDAZOLE ANTIVIRAL AGENTS | ZHANG, YI | | |
| 09834846 | Not | 030 | 04/13/2001 | COMPUTER SYSTEM | ZHANG, YI | | |

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| | Issued | | | THERMAL LAP MANAGEMENT METHOD AND APPARATUS | |
| 09757054 | Not Issued | 120 | 01/08/2001 | METHOD OF PRODUCING AN UNDIFFERENTIATED AVIAN CELL CULTURE USING AVIAN PRIMORDIAL GERM CELLS | ZHANG, YI GUO |
| 09769066 | Not Issued | 041 | 05/29/2001 | HEPATITIS E VIRUS ANTIGENS AND USES THEREFOR | ZHANG, YI-FAN |
| 60331764 | Not Issued | 020 | 11/21/2001 | MANAGEMENT OF MEDICAL IMAGERY AND PATIENT DATA | ZHANG, YI-QUAN |
| 09990096 | Not Issued | 020 | 11/21/2001 | METHOD AND APPARATUS FOR ADAPTIVELY BINARIZING COLOR DOCUMENT IMAGES | ZHANG, YICHUN |
| 10105576 | Not Issued | 030 | 03/25/2002 | METHODS OF CONTROLLING SWAY MODE GAIN IN A HEAD SUSPENSION | ZHANG, YIDUO |
| 60342238 | Not Issued | 020 | 12/21/2001 | REDUCED TPTR USING VERY THIN SHIELDS | ZHANG, YIFAN |
| 60257124 | Not Issued | 020 | 12/20/2000 | INNOVATIVE MICROFABRICATION METHOD FOR ULTRAFINE STRUCTURES | ZHANG, YIFAN |
| 09480879 | Not Issued | 161 | 01/10/2000 | NOVEL PLASMID DNA VECTORS | ZHANG, YILIN |
| 09987046 | Not Issued | 030 | 11/13/2001 | STEP SIZE CONVERGENCE CONTROL | ZHANG, YIMIN |
| 10171754 | Not Issued | 030 | 06/17/2002 | ECHO ANALYSIS FOR IDENTIFICATION OF HYBRID INDUCED ECHO IN A COMMUNICATION LINK | ZHANG, YIMIN |
| 09828324 | Not Issued | 030 | 04/06/2001 | METHOD AND APPARATUS FOR EQUALIZING A RADIO FREQUENCY SIGNAL | ZHANG, YIMIN |
| 60388971 | Not Issued | 020 | 06/14/2002 | P4P: PROXIES FOR P2P SYSTEMS | ZHANG, YIN |
| 09736877 | 6518136 | 150 | 12/14/2000 | SACRIFICIAL POLYSILICON SIDEWALL PROCESS AND RAPID THERMAL SPIKE ANNEALING FOR ADVANCE CMOS FABRICATION | ZHANG, YING |

| 10005920 | Not Issued | 071 | | DIAGNOSIS AND TREATMENT OF MYCOBACTERIAL INFECTIONS | ZHANG, YING |
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| 09836197 | Not Issued | 041 | | SELF-ALIGNED SILICIDE PROCESS FOR SILICON SIDEWALL SOURCE AND DRAIN CONTACTS AND STRUCTURE FORMED THEREBY | ZHANG, YING |
| 09811707 | Not Issued | 095 | 03/19/2001 | FABRICATION OF NOTCHED GATES BY PASSIVATING PARTIALLY ETCHED GATE SIDEWALLS AND THEN USING AN ISOTROPIC ETCH | ZHANG, YING |
| 09792040 | Not Issued | 094 | 02/22/2001 | METHOD FOR CHANGING SURFACE TERMINATION OF A PEROVSKITE OXIDE SUBSTRATE SURFACE | ZHANG, YING |
| 60331518 | Not Issued | 020 | 11/19/2001 | USE OF RESERPINE FOR THE TREATMENT OF TUBERCULOSIS (TB) AND DRUG-RESISTANT TB | ZHANG, YING |
| 10172262 | Not Issued | 040 | 06/14/2002 | SACRIFICIAL POLYSILICON SIDEWALL PROCESS AND RAPID THERMAL SPIKE ANNEALING FOR ADVANCE CMOS FABRICATION | ZHANG, YING |
| 09733324 | 6429091 | 150 | 12/08/2000 | PATTERNED BURIED INSULATOR | ZHANG, YING |
| 09745954 | 6490889 | 150 | 12/21/2000 | METHOD OF FORMING A GLASS PREFORM | ZHANG, YING- HUA |
| 09764912 | 6510710 | 150 | 01/17/2001 | MULTI-TUBE DELIVERY SYSTEM | ZHANG, YING- HUA |
| 09764938 | Not Issued | 095 | 01/17/2001 | METHOD OF PROVIDING A HIGH LEVEL OF RARE EARTH CONCENTRATIONS IN GLASS FIBER PREFORMS | ZHANG, YING- HUA |
| 09764648 | Not Issued | 041 | 01/17/2001 | METHOD OF MANUFACTURING AN OPTICAL FIBER PREFORM | ZHANG, YING- HUA |
| 09766121 | Not Issued | 095 | 01/18/2001 | METHOD OF FORMING AN OPTICAL FIBER | ZHANG, YING- HUA |
| 09949780 | Not Issued | 030 | 09/10/2001 | DELIVERY METHOD FOR THE TUMOR SPECIFIC APOPTOSIS | ZHANG, YING-HUI |

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|-----------------|---------------|-----|------------|--|---------------------|
| | | | I II | INDUCING ACTIVITY OF APOPTIN | |
| <u>09718262</u> | Not Issued | 161 | | EVOLUTION OF WHOLE CELLS AND ORGANISMS BY RECURSIVE SEQUENCE RECOMBINATION | ZHANG, YING-XIN |
| 60391555 | Not Issued | 020 | | METHOD AND COMPOSITIONS FOR APPLYING MULTIPLE OVERLYING ORGANIC PIGMENTED DECORATIONS ON CERAMIC SUBSTRATES | ZHANG, YINGCHAO |
| 09801115 | Not Issued | 071 | 03/07/2001 | NUCLEIC ACID MOLECULE ENCODING CHEMOKINE-LIKE FACTOR 1 (CKLF1) | ZHANG, YINGMEI |
| 09539198 | Not Issued | 030 | 03/29/2000 | REDUCING PROBE TRAFFIC IN MULTIPROCESSOR SYSTEMS USING A VICTIM RECORD TABLE | ZHANG, YINONG A. |
| 09994540 | Not Issued | 030 | 11/27/2001 | TRELLIS BASED MAXIMUM LIKELIHOOD SIGNAL ESTIMATION METHOD AND APPARATUS FOR BLIND JOINT CHANNEL ESTIMATION AND SIGNAL DETECTION | ZHANG, YINYUN |
| 60180795 | Not Issued | 159 | 02/07/2000 | NEW PHARMACEUTICAL COMPOSITION OF RELAXING SMOOTH MUSCLE | ZHANG, YISHENG |
| 09764417 | Not Issued | 061 | 01/19/2001 | BIO-ENERGY MUSCLE RELAXANTS | ZHANG, YISHENG |
| 09751833 | 6373824 | 150 | 12/29/2000 | NETWORK TRAFFIC SPECIFICATION | ZHANG, YITANG |
| 09496059 | Not Issued | 161 | 02/01/2000 | METHOD AND APPARATUS FOR WRAPPING A LABEL ONTO A CONTAINER WITH A GLUELESS LEADING EDGE | ZHANG, YITAO |
| 60253460 | Not Issued | 020 | 11/28/2000 | EXPRESSION ANALYSIS OF KIAA NUCLEIC ACIDS AND POLYPEPTIDES USEFUL IN THE DIAGNOSIS AND TREATMENT OF PROSTATE CANCER | ZHANG, YIXIAN |
| 60253374 | Not Issued | 020 | 11/28/2000 | EXPRESSION ANALYSIS OF INHIBITOR OF DIFFERENTIATION NUCLEIC | ZHANG, YIXIAN |

| | | | | ACIDS AND POLYPEPTIDES USEFUL IN THE DIAGNOSIS AND TREATMENT OF PROSTATE CANCER | |
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| 60253539 | Not Issued | 020 | | EXPRESSION ANALYSIS OF FKBP54 NUCLEIC ACIDS AND POLYPEPTIDES USEFUL IN THE DIAGNOSIS AND TREATMENT OF PROSTATE CANCER | ZHANG, YIXIAN |
| 09996630 | Not Issued | 020 | | EXPRESSION ANALYSIS OF KIAA NUCLEIC ACIDS AND POLYPEPTIDES USEFUL IN THE DIAGNOSIS AND TREATMENT OF PROSTATE CANCER | ZHANG, YIXIAN |
| 60253487 | Not Issued | 020 | 11/28/2000 | EXPRESSION ANALYSIS OF SMARC NICLEIC ACIDS AND POLYPEPTIDES USEFUL IN THE DIAGNOSIS AND TREATMENT OF PROSTATE CANCER | ZHANG, YIXIAN |

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| 08472465 | Not Issued | 161 | 06/07/1995 | HEPATITIS E VIRUS ANTIGENS AND USES THEREFOR | ZHANG , YI- FAN |
| 08472961 | Not Issued | 161 | 06/07/1995 | | ZHANG , YI- FAN |
| 08267710 | Not Issued | 161 | 06/29/1994 | USE OF BACTERIAL COMPONENT TO ENHANCE TARGETED DELIVERY OF POLYNUCLEOTIDES TO CELLS | ZHANG , YING |
| 08057502 | 5373576 | 150 | 05/04/1993 | HIGH POWER OPTICAL FIBER | ZHANG , YING H. |
| 08289813 | 5414198 | 150 | | DEGRADATION OF NITROCELLULOSE BY COMBINED CULTURES OF SCLEROTIUM ROLFSII ATCC 24459 AND FUSARIUM SOLANI IFO 31093 | ZHANG , YING- ZHI |
| 07092822 | Not Issued | 166 | 09/03/1987 | DIGITAL HIGH-VOLTAGE MEGA- OHM | YISHENG |
| 08292345 | 6001968 | 150 | 08/17/1994 | OB POLYPEPTIDES, MODIFIED FORMS AND COMPOSITIONS | ZHANG , YIYING |
| 60356813 | Not Issued | 020 | 02/14/2002 | MULTI-CHANNEL BLIND SYSTEM IDENTIFICATION FOR CARDIOVASCULAR MONITORING | ZHANG, YI |
| 60339025 | Not Issued | 020 | 12/10/2001 | SUBSTITUTED 2-METHYL- BENZIMIDAZOLE RESPIRATORY SYNCYTIAL VIRUS ANTIVIRAL AGENTS | ZHANG, YI |
| 10185406 | Not Issued | 020 | 06/28/2002 | COMPUTING GAIN FACTORS FOR WEIGHTING DATA STREAMS IN A COMMUNICATION SYSTEM | ZHANG, YI |
| 10218095 | Not | 020 | 08/13/2002 | MAGE-A4 ANTIGENIC PEPTIDES | ZHANG, YI |

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| <u>10309505</u> | Not Issued | 019 | | SUBSTITUTED 2-METHYL- BENZIMIDAZOLE RESPIRATORY SYNCYTIAL VIRUS ANTIVIRAL AGENTS | ZHANG, YI |
| 10283512 | Not Issued | 020 | 10/30/2002 | CALLING CARD SYSTEM FOR VOICE AND DATA TRANSMISSION OVER A PUBLIC NETWORK | ZHANG, YI |
| 09643217 | Not Issued | 041 | 08/18/2000 | CHIMERIC AND/OR GROWTH- RESTRICTED FLAVIVIRUSES | ZHANG, YI- MING |
| 10037243 | Not Issued | 030 | 01/04/2002 | FACILITATING PROTEIN FOLDING AND SOLUBILITY BY USE OF PEPTIDE EXTENSIONS | ZHANG, YIAN- BIAO |
| 10206739 | Not Issued | 030 | 07/26/2002 | MAGNETIC SHIELDS FOR REDUCED VARIATIONS OF HEAD-MEDIA SPACING | ZHANG, YIFAN |
| 10026188 | Not Issued | 030 | 12/21/2001 | ASSAYS FOR TASTE RECEPTOR CELL SPECIFIC ION CHANNEL | ZHANG, YIFENG |
| 10190417 | Not Issued | 020 | 07/03/2002 | MAMMALIAN SWEET AND AMINO ACID HETERODIMERIC TASTE RECEPTORS | ZHANG, YIFENG |
| 10280853 | Not Issued | 030 | 10/25/2002 | QUADRATURE MISMATCH COMPENSATION | ZHANG, YIFENG |
| 10280749 | Not Issued | 030 | 10/25/2002 | SINGLE OSCILLATOR DSSS AND OFDM RADIO RECEIVER | ZHANG, YIFENG |
| 10203202 | Not Issued | 019 | 01/01/0001 | METHOD FOR BLEACHING MECHANICAL AND CHEMITHERMOMECHANICAL PULP | ZHANG, YIJING |
| 10017408 | Not Issued | 030 | 10/30/2001 | METHOD FOR EXTRACTING NAME ENTITIES AND JARGON TERMS USING A SUFFIX TREE DATA STRUCTURE | ZHANG, YIMIN |
| 10271900 | Not Issued | 020 | 10/15/2002 | RADIO FREQUENCY WETNESS DETECTION SYSTEM | ZHANG, YIMIN |
| 10223443 | Not Issued | 030 | 08/20/2002 | DOUBLE TALK, NLP AND COMFORT NOISE | ZHANG, YIMIN |
| 10019879 | Not Issued | 019 | 01/01/0001 | A METHOD AND APPARATUS FOR EXTRACTING ENTITY NAMES AND THEIR RELATIONS | ZHANG, YIMIN |
| 10029669 | Not Issued | 030 | | DYNAMICALLY ESTIMATING ECHO RETURN LOSS IN A COMMUNICATION LINK | ZHANG, YIMIN |
| 60398474 | Not | 020 | 07/25/2002 | FAST ACCURATE COMPUTATION | NZHANG, YIN |

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| | Issued | | | OF LARGE-SCALE IP TRAFFIC MATRICES FROM LINK LOADS | |
| 60421883 | Not Issued | 020 | 10/28/2002 | IN SITU ADAPTIVE MASKS | ZHANG, YIN |
| 60422742 | Not Issued | 020 | 10/31/2002 | THIN FILM INTERLEAVER | ZHANG, YIN |
| 60429467 | Not Issued | 020 | 11/26/2002 | BATCHED PACK AGE PROCESS FOR CREATING OPTICAL BLOCKS FOR USE IN FORMING OPTICAL COMPONENTS | ZHANG, YIN |
| 60422822 | Not Issued | 020 | 10/30/2002 | SYSTEMS AND METHODS FOR MANUFACTURING COAXIAL OPTICAL COMPONENTS | ZHANG, YIN |
| 60419472 | Not Issued | 020 | 10/18/2002 | LASER BENDING FABRICATION OF OPTICAL INTERLEAVER | ZHANG, YIN |
| 09836197 | Not Issued | 041 | 04/18/2001 | SELF-ALIGNED SILICIDE PROCESS FOR SILICON SIDEWALL SOURCE AND DRAIN CONTACTS AND STRUCTURE FORMED THEREBY | ZHANG, YING |
| 60399989 | Not Issued | 020 | 07/31/2002 | SYSTEM, METHOD, AND PROGRAM PRODUCTS FOR VIEWING DIGITAL PHOTOS WITH A PORTABLE ELECTRONIC DEVICE VIA TELEVISION OR OTHER DISPLAYING DEVICES | ZHANG, YING |
| 60419489 | Not Issued | 020 | 10/18/2002 | ASSAY SPECIFIC FOR DETECTION OF HOMOCYSTEINE | ZHANG, YING |
| 10016427 | Not Issued | 030 | 12/10/2001 | SIX DEGREE OF FREEDOM POSITION RANGING | ZHANG, YING |
| 60345133 | Not Issued | 020 | | METHOD OF FABRICATING PREFORMS WITH HIGH DOPANT CONCENTRATION AND GOOD GEOMETRY | ZHANG, YING HUA |
| 60345135 | Not Issued | 020 | 10/19/2001 | DEUTERIUM PLASMA AND HIGH TEMPERATURE METHODS FOR PASSIVATING ER DOPED FIBER OR PREFORM | HUA |
| 10278741 | Not Issued | 019 | 10/21/2002 | METHOD OF REDUCING A HYDROGEN CONTENT OF AN OPTICAL FIBER OR PREFORM | ZHANG, YING HUA |
| 10073697 | Not Issued | 030 | 02/11/2002 | METHOD OF FABRICATING OPTICAL FIBER PREFORMS WITH HIGH DOPANT CONCENTRATION AND GOOD | ZHANG, YING HUA |

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| 60352747 | Not Issued | 020 | | WAVELENGTH OPTIMIZATION FOR ER/YB DOPED OPTICAL FIBER AMPLIFIERS | ZHANG, YING HUA |
| 60345925 | Not Issued | 020 | 11/07/2001 | GAIN WITH HIGH HYDROGEN RESISTANCE | ZHANG, YING HUA |
| 10289144 | Not Issued | 020 | 11/06/2002 | HYDROGEN-INDUCED LOSS | ZHANG, YING HUA |
| 10194686 | Not Issued | 030 | 07/11/2002 | EVOLUTION OF WHOLE CELLS AND ORGANISMS BY RECURSIVE SEQUENCE RECOMBINATION | ZHANG, YING- XIN |
| 10274170 | Not Issued | 019 | 10/17/2002 | TECHNIQUES TO MANUFACTURE OPTICAL SIGNAL TRANSMITTERS | ZHANG, YINGFAN |
| 09989335 | Not Issued | 030 | 11/20/2001 | UPLINK POWER CONTROL ALGORITHM | ZHANG, YINGLU |
| 10261299 | Not Issued | 020 | 09/30/2002 | APPARATUS AND METHOD FOR AN OVERLOAD CONTROL PROCEDURE AGAINST DENIAL OF SERVICE ATTACK | ZHANG, YINGLU |
| 10314094 | Not Issued | 020 | 12/05/2002 | OPTIMIZING SOURCE CODE FOR ITERATIVE EXECUTION | ZHANG, YINGWEI |
| 09996529 | Not Issued | 030 | | EXPRESSION ANALYSIS OF INHIBITOR OF DIFFERENTIATION NUCLEIC ACIDS AND POLYPEPTIDES USEFUL IN THE DIAGNOSIS AND TREATMENT OF PROSTATE CANCER | ZHANG, YIXIAN |
| 09997423 | Not Issued | 030 | 11/28/2001 | EXPRESSION ANALYSIS OF FKBP NUCLEIC ACIDS AND POLYPEPTIDES USEFUL IN THE DIAGNOSIS AND TREATMENT OF PROSTATE CANCER | ZHANG, YIXIAN |

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| 09155342 | 6225800 | 150 | 09/25/1998 | ARRAGEMENT FOR COUPLING AN RF-SQUID MAGNETOMETER TO A SUPERCONDUCTIVE TANK CIRCUIT | ZHANG , YI | | |
| 09383660 | 6215554 | 150 | | LASER DIAGNOSTIC UNIT FOR DETECTING CARCINOSIS | ZHANG , YI | | |
| 08514237 | Not Issued | 161 | 08/11/1995 | THIEF EVADING DEVICE FOR AUTOMOBILE ELECTRONIC SYSTEMS | ZHANG , YI | | |
| 60035967 | Not Issued | 159 | 01/21/1997 | LOW INDUCTANCE SHUNT | ZHANG , YI | | |
| 09169361 | 6397345 | 150 | 10/09/1998 | FAULT TOLERANT BUS FOR CLUSTERED SYSTEM | ZHANG, YI | | |
| 09404061 | 6314219 | 150 | 09/23/1999 | FIBER MINI-BEND LIGHT GUIDE | ZHANG, YI | | |
| 60094760 | Not Issued | 159 | 07/31/1998 | METHOD & APPARATUS FOR MONITORING A BELT EMPLOYING SYNCHRONOUS AVERAGING WITHOUT A TACHOMETER | ZHANG , YI | | |
| 09420653 | Not Issued | 093 | 10/19/1999 | RECONFIGURABLE FIBER OPTIC MODULE | ZHANG, YI | | |
| 09169838 | 6412079 | 150 | 10/09/1998 | SERVER POOL FOR CLUSTERED SYSTEM | ZHANG , YI | | |
| 09169360 | 6230190 | 150 | 10/09/1998 | SHARED-EVERYTHING FILE STORAGE FOR CLUSTERED SYSTEM | ZHANG , YI | | |
| 08528190 | 5732493 | 250 | 09/14/1995 | DUAL PENDULUM DISPLAY APPARATUS | ZHANG, YI Y. | | |
| 08472961 | Not Issued | 161 | 06/07/1995 | HEPATITIS E VIRUS ANTIGENS AND USES | ZHANG, YI-FAN | | |

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| | | | | THEREFOR | |
| 08477292 | 6291641 | 150 | | HEPATITIS E VIRUS ANTIGENS AND USES THEREFOR | ZHANG, YI-FAN |
| 08327952 | Not Issued | 161 | | HEPATITIS E VIRUS ANTIGENS AND USES THEREFOR | ZHANG, YI-FAN |
| 60065859 | Not Issued | 159 | | LIPIDS | ZHANG , YI-LIN |
| 60088359 | Not Issued | 159 | 04/04/1997 | METHODS OF DELIVERY USING CATIONIC LIPIDS AND HELPER LIPIDS | ZHANG , YI-LIN |
| 09158510 | 6217672 | 150 | | MAGNETIC ANNEALING OF MAGNETIC ALLOYS IN A DYNAMIC MAGNETIC FIELD | ZHANG , YIDE |
| 60059906 | Not Issued | 159 | 09/24/1997 | MAGNETIC ANNEALING OF MAGNETIC ALLOYS IN A DYNAMIC MAGNETIC FIELD | ZHANG , YIDE |
| 09183634 | 6121457 | 150 | 10/30/1998 | COMPOSITIONS AND METHODS USING NOVEL SUBSTITUTED IMIDAZOLIUM LIPIDS | ZHANG , YILIN |
| 60084820 | Not Issued | 159 | 05/08/1998 | METHODS AND COMPOSITIONS FOR DELIVERING NUCLEIC ACIDS | ZHANG , YILIN |
| 60080450 | Not Issued | 159 | 04/03/1998 | CATIONIC LIPID FORMULATION DELIVERING NUCLEIC ACID TO PERITONEAL TUMORS | ZHANG , YILIN |
| 60023641 | Not Issued | 159 | 08/09/1996 | COMPUTER IMPLEMENTED METHOD AND SYSTEM FOR TRADING PHYSICAL COMMODITIES THROUGH ELECTRONIC AUCTIONS AND ELECTRONIC NEGOTIATIONS | ZHANG , YIMING |
| 09384699 | Not Issued | 030 | 08/27/1999 | SCALABLE ATOMIC MULTICAST | ZHANG, YIN |
| 08473507 | 5637237 | 150 | 06/07/1995 | METHOD FOR HOT WALL REACTIVE ION ETCHING USING A DIELECTRIC OR METALLIC LINER WITH TEMPERATURE CONTROL TO ACHIEVE PROCESS STABILITY PROCESS | ZHANG, YING |

| | 11 | ١ | | STABILITY | |
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| 08484009 | 5728399 | | 06/07/1995 | USE OF A BACTERIAL COMPONENT TO ENHANCE TARGETED DELIVERY OF POLYNUCLEOTIDES TO CELLS | ZHANG, YING |
| 09146228 | 6096655 | 150 | | METHOD FOR FORMING VIAS AND TRENCHES IN AN INSULATION LAYER FOR A DUAL-DAMASCENE MULTILEVEL INTERCONNECTION STRUCTURE | |
| 09401493 | 6419162 | 150 | | MAXIMIZING DATA CAPACITY FOR EMBEDDED DATA BLOCKS WITH OCCLUSIONS THEREIN | ZHANG , YING |
| 09187682 | Not Issued | 161 | | IDENTIFICATION OF PYRAZINAMIDE-RESISTANT MYCOBACTERIA AND METHODS FOR TREATING MYCOBACTERIAL INFECTIONS | ZHANG, YING |
| 08313185 | 5851763 | 150 | 10/12/1994 | RAPID DETECTION OF ANTIBIOTIC RESISTANCE IN MYCOBACTERIUM TUBERCULOSIS | ZHANG, YING |
| 07875940 | Not Issued | 161 | 04/30/1992 | RAPID DETECTION OF ISONIAZID RESISTANCE IN MYCOBACTERIUM TUBERCULOSIS | ZHANG, YING |
| 60091290 | Not Issued | 159 | 06/30/1998 | METHOD OF MANUFACTURING A RARE EARTH DOPED OPTICAL FIBER | ZHANG , YING- HUA |
| 09354922 | 6379964 | 150 | 07/15/1999 | EVOLUTION OF WHOLE CELLS AND ORGANISMS BY RECURSIVE SEQUENCE RECOMBINATION | ZHANG , YING- XIN |
| 09359471 | 6214414 | 150 | 07/22/1999 | METHOD FOR FORMING A SEQUENCE OF CROOSLINKED PIGMENTED COATINGS ON CERAMIC SUBSTRATES | ZHANG , YINGCHAO |
| 09359473 | Not Issued | 161 | 07/22/1999 | PIGMENTED COATINGS FOR CERAMIC SUBSTRATES | ZHANG , YINGCHAO |

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| 09359472 | Not Issued | 161 | 07/22/1999 | | ZHANG , YINGCHAO |
| 60074575 | Not Issued | 159 | | THE INTERFERON-GAMMA SIGNAL TRANSDUCTION PATHWAY | ZHANG , YINGXUE |
| 08490161 | 5659034 | 150 | | LAYERED VANADIUM OXIDE COMPOSITIONS | |
| 08729473 | 5717120 | 150 | | LAYERED VANADIUM OXIDE COMPOSITIONS | |
| 08961857 | 5824813 | 150 | 10/31/1997 | LAYERED VANADIUM OXIDE COMPOSITIONS | |
| 08483211 | 6309853 | 150 | | MODULATORS OF BODY WEIGHT, CORRESPONDING NUCLEIC ACIDS AND PROTEINS, AND DIAGNOSTIC AND THERAPEUTIC USES THEREOF | ZHANG , YIYING |
| 08485941 | Not Issued | 161 | 06/07/1995 | MODULATORS OF BODY WEIGHT, CORRESPONDING NUCLEIC ACIDS AND PROTEINS, AND DIAGNOSTIC AND THERAPEUTIC USES THEREOF | ZHANG , YIYING |
| 08485942 | 6048837 | 150 | 06/07/1995 | OB POLYPEPTIDES AS MODULATORS OF BODY WEIGHT | ZHANG , YIYING |
| 09183374 | Not Issued | 161 | 10/30/1998 | MODULATORS OF BODY WEIGHT CORRESPONDING NUCLEIC ACIDS AND PROTEINS DANDIAGNOSTIC AND THERAPEUTIC USES THEREOF | ZHANG , YIYING |
| 09347068 | Not Issued | 161 | 07/02/1999 | MODULATORS OF BODY WEIGHT, CORRESPONDING NUCLEIC ACIDS AND PROTEINS, AND DIAGNOSTIC AND THERAPEUTIC USES THEREOF | ZHANG , YIYING |
| 08485943 | Not Issued | 071 | | MODULATORS OF BODY WEIGHT, CORRESPONDING NUCLEIC ACIDS AND PROTEINS, AND DIAGNOSTIC AND THERAPEUTIC USES THEREOF | |
| 08488208 | 6124448 | 150 | 06/07/1995 | NUCLEIC ACID PRIMERS AND | ZHANG, YIYING |

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| | | | | PROBES FOR THE MAMMALIAN OB GENE | |
| 08488214 | 6124439 | 150 | 06/07/1995 | OB POLYPEPTIDES ANTIBODIES AND METHOD OF MAKING | ZHANG , YIYING |
| 08488215 | Not Issued | 161 | 06/07/1995 | MODULATORS OF BODY WEIGHT, CORRESPONDING NUCLEIC ACIDS AND PROTEINS, AND DIAGNOSTIC AND THERAPEUTIC USES THEREOF | ZHANG , YIYING |
| 08488223 | 6350730 | 150 | 06/07/1995 | OB POLYPEPTIDES AND MODIFIED FORMS AS MODULATORS OF BODY WEIGHT | ZHANG , YIYING |
| 08488224 | Not Issued | 161 | 06/07/1995 | MODULATORS OF BODY WEIGHT CORRESPONDING NUCLEIC ACIDS AND PROTEINS AND DIAGNOSTIC AND THERAPEUTIC USES THEREOF | ZHANG , YIYING |

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| 60094760 | Not Issued | 159 | 07/31/1998 | MONITORING A BELT EMPLOYING SYNCHRONOUS AVERAGING WITHOUT A TACHOMETER | ZHANG , YI |
| 08569219 | 5867024 | 150 | 12/15/1995 | RF-SQUID WITH AN INTEGRATED LAMBDA- MICROWAVE RESONATOR USEFUL AS HIGHLY SENSITIVE MAGNETOMETER | ZHANG , YI |
| 08783189 | 5818214 | 150 | 01/15/1997 | BUCK REGULATOR CIRCUIT | ZHANG, YI |
| 60137033 | Not Issued | 159 | 06/01/1999 | BLOOD PRESSURE MONITOR | ZHANG, YI |
| 08374902 | Not Issued | 161 | 01/09/1995 | PORTABLE AIR PURIFYING DEVICE | ZHANG, YI |
| 08817029 | Not Issued | 164 | 03/25/1997 | HIGH-FREQUENCY SQUID WITH FLUX-FOCUSING STRUCTURE INTEGRATED WITH A RESONATOR IN THE SEMI CONDUCTOR NATURAL | ZHANG , YI |
| 08817952 | Not Issued | 161 | 04/08/1997 | SQUID WITH SUPERCONDUCTIVE LOOP AND RESONATOR | ZHANG , YI |
| 60158987 | Not Issued | 159 | 10/12/1999 | PACKETIZED NETWORK TRUNK INTERFACE | ZHANG , YI |
| 08860986 | 5901453 | 150 | 06/16/1997 | GRADIOMETER | ZHANG , YI |
| 09234617 | Not Issued | 161 | | VOICE ACTIVATED ACCESS TO MULTIPLE INFORMATION PROVIDERS | |
| 08817553 | Not | 161 | 04/09/1997 | CONCENTRATED COMPONENT | ZHANG, YI |

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| 08374985 | Not Issued | 164 | | SMOKE FILTERING ASHTRAY DEVICE | ZHANG, YI |
| 60139342 | Not Issued | 159 | | PACKETIZED COMMUNICATIONS APPARATUS AND METHOD | ZHANG, YI |
| 60135738 | Not Issued | 159 | | BATCH PROCESSING OF EMAIL MESSAGES OF MIME EMAIL SYSTEM | |
| 60134186 | Not Issued | 159 | | USER CONTROLLED MULTIPLE URLS LOADING AND VIEWING IN ONE BROWSER | |
| 09465562 | Not Issued | 161 | 12/17/1999 | CATIONIC LIPIDS | ZHANG, YI LIN |
| 60113416 | Not Issued | 159 | 12/22/1998 | CATIONIC LIPIDS | ZHANG, YI LIN |
| 08542634 | 6214970 | 150 | 10/13/1995 | HEPATITIS E VIRUS ANTIGENS AND USES THEREFOR | ZHANG, YI-FAN |
| 07693300 | 5332811 | 150 | 05/01/1991 | NEW ETOPOSIDE ANALOGS | ZHANG, YI-LIN |
| 08825854 | 5958894 | 150 | 04/04/1997 | AMPHIPHILIC BIGUANIDE DERIVATIVES | ZHANG , YI-LIN |
| 08832749 | Not Issued | 157 | 04/04/1997 | METHODS OF DELIVERY USING CATIONIC LIPIDS AND HELPER LIPIDS | ZHANG, YI-LIN |
| 07987765 | 5300500 | 150 | 12/08/1992 | 4 BETA-AMINO PODOPHYLLOTOXIN ANALOG COMPOUNDS AND METHODS | ZHANG, YI-LIN |
| 09049791 | Not Issued | 169 | 03/27/1998 | METHOD OF DELIVERY USING CATIONIC LIPIDS AND HELPER LIPIDS | ZHANG, YI-LIN |
| 07218852 | Not Issued | 166 | 07/14/1988 | VACCINE FOR DENGUE VIRUS | ZHANG , YI- MING |
| 07957075 | Not Issued | 161 | | VACCINE FOR DENGUE VIRUS | ZHANG , YI- MING |
| 09458238 | 6351350 | 150 | | SHOCK LIMITER SYSTEM FOR A HEAD SUSPENSION | ZHANG, YIDUO |
| 06905834 | Not Issued | 163 | 09/10/1986 | PROCESS AND AN EQUIPMENT TO FORM A SULPHIDE CASE AT THE SURFACES OF METAL PARTS | |
| 60107210 | Not Issued | 159 | 11/05/1998 | LINEAR PROGRAMMING METHOD OF NETWORK | ZHANG, YIHAO LISA |

| | | | | DESIGN FOR CARRYING TRAFFIC FROM ENDNODES TO A CORE NETWORK AT LEAST COST | |
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| 09255945 | 6363334 | 150 | | LINEAR PROGRAMMING METHOD OF NETWORKING DESIGN FOR CARRYING TRAFFIC FROM ENDNODES TO A CORE NETWORK AT LEAST COST | ZHANG , YIHAO LISA |
| 60114748 | Not Issued | 159 | 01/05/1999 | METHODS AND COMPOSITIONS FOR DELIVERING NUCLEIC ACIDS | ZHANG , YILIN |
| 09477851 | Not Issued | 168 | 01/05/2000 | METHODS AND COMPOSITIONS FOR DELIVERING NUCLEIC ACIDS | ZHANG, YILIN |
| 08588213 | 5767090 | 150 | 01/17/1996 | MICROBIALLY PRODUCED RHAMNOLIPIDS (BIOSURFACTANTS) FOR THE CONTROL OF PLANT PATHOGENIC ZOOSPORIC FUNGI | ZHANG , YIMIN |
| 60098065 | Not Issued | 159 | 08/27/1998 | SCALABLE ATOMIC MULTICAST COMMUNICATIONS METHOD | ZHANG, YIN |
| 08621813 | Not Issued | 161 | 03/22/1996 | METHOD AND APPARATUS FOR DESTROYING ORGANIC COMPOUNDS IN FLUID | ZHANG, YIN |
| 08160102 | 5501801 | 150 | 11/30/1993 | METHOD AND APPARATUS FOR DESTROYING ORGANIC COMPOUNDS IN FLUID | ZHANG, YIN |
| 08577206 | Not Issued | 169 | 12/22/1995 | METHOD AND APPARATUS FOR DESTROYING ORGANIC COMPOUNDS IN FLUID | ZHANG , YIN |
| 08579368 | Not Issued | 169 | 12/27/1995 | METHOD AND APPARATUS FOR DESTROYING ORGANIC COMPOUNDS IN FLUID | ZHANG , YIN |
| 09014169 | Not Issued | 161 | 01/27/1998 | METHOD AND APARATUS FOR PROVIDING ENDPOINT DETECTION USING RESIDUAL GAS ANALYSIS | ZHANG, YING |
| 07929206 | 5633131 | 150 | 08/14/1992 | RAPID DETECTION OF ISONIAZID RESISTANCE IN MYCOBACTERIUM TUBERCULOSIS PROBES FOR SELECTING NUCLEIC ACID | ZHANG, YING |

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| | | | | ENCODING ISONIAZID RESISTANCE, AND METHODS AND KITS | |
| 08622353 | 5700925 | 250 | | PHASE, STRESS RESPONSE SIGMA FACTOR FROM MYCOBACTERIUM TUBERCULOSIS | ZHANG , YING |
| 08208158 | 5798016 | 150 | 03/08/1994 | APPARATUS FOR HOT WALL REACTIVE ION ETCHING USING A DIELECTRIC OR METALLIC LINER WITH TEMPERATURE CONTROL TO ACHIEVE PROCESS STABILITY | ZHANG , YING |
| 08823005 | 5966490 | 150 | 03/21/1997 | CLAD OPTIC FIBER, AND PROCESS FOR PRODUCTION THEREOF | ZHANG , YING HUA |
| 08802704 | 5811605 | 150 | 02/19/1997 | PREPARATION OF 1,2,3,3,- TETRACHLOROPROPENE | ZHANG , YINGCHAO |
| 09249154 | 6103531 | 150 | 02/12/1999 | METHODS OF DISRUPTING INTERFERON SIGNAL TRANSDUCTION PATHWAYS | ZHANG , YINGXUE |
| 08591886 | 5690808 | 150 | 01/25/1996 | ELECTROCHEMICAL GAS SENSORS AND METHODS FOR SENSING ELECTROCHEMICAL ACTIVE GASES IN GAS MIXTURES | ZHANG , YINING |
| 08839383 | Not Issued | 161 | 04/18/1997 | GAS/MOISTURE SENSORS FOR INERT GASES | |
| 08631075 | Not Issued | 166 | 04/12/1996 | GAS MOISTURE SENSORS FOR INERT GASES | ZHANG, YINING |
| 08793756 | Not Issued | 161 | 07/11/1997 | GENETICALLY MODIFIED T- CELLS | ZHANG, YIPING |
| 08347563 | 5935810 | 150 | 11/30/1994 | MAMMALIAN OB POLYPEPTIDES CAPABLE OF MODULATING BODY WEIGHT, CORRESPONDING NUCLEIC ACIDS, AND DIAGNOSTIC AND THERAPEUTIC USES THEREOF | ZHANG, YIYING |
| 08438431 | 6429290 | 150 | 05/10/1995 | OB POLYPEPTIDES,MODIFIED FORMS AND DERIVATIVES | ZHANG, YIYING |

Last Name

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Your Search was:

Last Name = ZHANG

| Application# | Patent# | Status | Date Filed | Title | Inventor Name |
|-----------------|---------------|--------|------------|--|-----------------|
| <u>08860986</u> | 5901453 | | | GRADIOMETER | ZHANG, YI |
| 09308883 | 6300760 | 150 | 05/26/1999 | AN ARRANGEMENT FOR COUPLING AN RF-SQUID CIRCUIT TO A SUPER CONDUCTING TANK CIRCUIT. | ZHANG , YI |
| 08229763 | 5450866 | 150 | 04/19/1994 | DENTAL FLOSS DEVICE | ZHANG , YI |
| 60010723 | Not Issued | 159 | 01/29/1996 | LOW INDUCTANCE SHUNT | ZHANG , YI |
| 60010218 | Not Issued | 159 | 01/18/1996 | BUCK REGULATOR CIRCUIT | ZHANG, YI |
| 09054769 | 6235310 | 150 | 04/03/1998 | IMPROVED METHODS OF DELIVERY USING CATIONIC LIPIDS AND HELPER LIPIDS | ZHANG , YI-LIN |
| 08250802 | 6184024 | 150 | 05/27/1994 | CHIMERIC AND/OR GROWTH- RESTRICTED FLAVIVIRUSES | ZHANG , YI-MING |
| 09083011 | 6147990 | 150 | 05/21/1998 | METHOD FOR PROVIDING COMMUNICATIONS NETWORK STABILITY | ZHANG, YIHAO |
| 09283543 | 6271209 | 150 | 04/01/1999 | CATIONIC LIPID FORMULATION DELIVERING NUCLEIC ACID TO PERITONEAL TUMORS | ZHANG, YILIN |
| 09306738 | Not Issued | 161 | 05/07/1999 | METHODS AND COMPOSITIONS FOR DELIVERING NUCLEIC ACIDS | ZHANG, YILIN |
| 09082614 | 6124098 | 150 | 05/20/1998 | RAPID DETECTION OF ANTIBIOTIC RESISTANCE IN MYCOBACTERIUM TUBERCULOSIS | ZHANG, YING |

| | | ı | . 11 | | ZHANG VING |
|----------|---------------|-----|------------|---|----------------------|
| 60019208 | Not Issued | 159 | 06/06/1996 | INHIBITING LIPID AND GLUCOSE PRODUCTION | ZHANG , YING |
| 08029655 | Not Issued | 161 | 03/11/1993 | ISONIAZID RESISTANCE IN MYCOBACTERIUM TUBERCULOSIS | ZHANG , YING |
| 08459499 | 5871912 | 150 | 06/02/1995 | NUCLEIC ACID PROBES SEQUENCES AND METHODS FOR DETECTING MYCOBACTERIUM RESISTANT TO ISONIAZID | ZHANG , YING |
| 08655821 | 5846718 | 150 | 05/31/1996 | IDENTIFICATION OF PYRAZINAMIDE-RESISTANT MYCOBACTERIA AND METHODS FOR TREATING MYCOBACTERIAL INFECTIONS | ZHANG , YING |
| 60007022 | Not Issued | 159 | 10/06/1995 | BIODEGRADATION OF NITROGLYCERIN UNDER AEROBIC CONDITIONS | ZHANG, YINGZ. |
| 09340473 | 6192713 | 150 | 06/30/1999 | APPARATUS FOR THE MANUFACTURE OF GLASS PREFORMS | ZHANG , YING- HUA |
| 09112657 | 5980724 | 150 | 07/09/1998 | METHOD OF ELECTROCHEMICALLY PRODUCING EPOXIDES | ZHANG , YINGCHAO |
| 09112660 | 5997716 | 150 | 07/09/1998 | METHOD OF ELECTROCHEMICALLY PRODUCING EPOXIDES | ZHANG , YINGCHAO |
| 09112659 | 5997715 | 150 | 07/09/1998 | METHOD OF ELECTROCHEMICALLY PRODUCING EPOXIDES | ZHANG , YINGCHAO |
| 09112658 | 5972195 | 150 | 07/09/1998 | METHOD OF ELECTROLYTICALLY PRODUCING EPOXIDES | ZHANG , YINGCHAO |
| 09326033 | 6294694 | 150 | 06/04/1999 | MATRIX METALLOPROTEINASE INHIBITORS AND METHOD OF USING SAME | ZHANG , YINGSHENG |
| 09061273 | 6258570 | 150 | 04/17/1998 | PCR ASSAY FOR BACTERIAL AND VIRAL MENINGITIS | ZHANG, YINGZE |
| 07333883 | Not Issued | 161 | 04/04/1989 | DIGITAL HIGH VOLTAGE MEGA-OHM WITH AUTOMATIC MEASUREMENT RANGE SELECTION | ZHANG , YISHENG |

09316393 Not Issued No

Inventor Search Completed: No Records to Display.

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Your Search was:

Last Name = PEARCE First Name = BRADLEY

| Application# | Patent# | Status | Date Filed | Title | Inventor Name |
|--------------|---------------|--------|------------|---|---------------------------|
| 07583618 | Not Issued | 161 | | ANALOGS IN THE TREATMENT OF HYPERCHOLESTEROLEMIA AND HYPERLIPIDEMIA | PEARCE , BRADLEY C. |
| 07583907 | 5217992 | 150 | 09/17/1990 | TOCOTRIENOLS IN THE TREATMENT OF HYPERCHOLESTEROLEMIA, HYPERLIPIDEMIA AND THROMBOEMBOLIC DISORDERS | PEARCE, BRADLEY C. |
| 08048695 | 5318993 | 150 | 04/16/1993 | ANTIHYPERLIPIDEMIC BENZOQUINONES | PEARCE, BRADLEY C. |
| 08048696 | 5411969 | 150 | 04/16/1993 | ANTIHYPERLIPIDEMIC/ANTIOXIDANT DIHYDROQUINOLINES | PEARCE, BRADLEY C. |
| 09176359 | Not Issued | 161 | 10/21/1998 | ANTIMIGRAINE PEPTIDERGIC DERIVATIVES OF INDOLYLALKYL- PYRIDINYL AND PIPERAZINES | PEARCE, BRADLEY C. |
| 07416910 | Not Issued | 168 | 10/04/1989 | TOCOTRIENOLS IN THE TREATMENT OF HYPERCHOLESTEROLEMIA, HYPERLIPIDEMIA AND THROMBOEMBOLIC DISORDERS | PEARCE, BRADLEY C. |
| 08338719 | Not Issued | 161 | 11/14/1994 | BENZOPYRAN ANALOGS OF THE TOCOTRIENOLS IN THE TREATMENT OF HYPERCHOLESTEROLEMIA AND HYPERLIPIDEMIA | PEARCE, BRADLEY C. |
| 08405619 | 5627192 | 150 | 03/15/1995 | ANTIHYPERLIPIDEMIC/ANTIOXIDANT DIHYDROQUINOLINES | PEARCE , BRADLEY C. |
| 07749778 | 5204373 | 150 | 08/26/1991 | FARNESYLATED TETRAHYDRO- NAPHTHALENOLS AS HYPOLIPIDEMIC AGENTS | PEARCE, BRADLEY C. |
| 60002983 | Not | 159 | 08/29/1995 | CEPHALOSPORIN DERIVATIVES | PEARCE, |

| V | Issued | | | | BRADLEY C |
|----------|---------------|-----|------------|---|---------------------------|
| 08242213 | 5393776 | 150 | : | TOCOTRIENOL ANALOGS IN THE TREATMENT OF HYPERCHOLESTEROLEMIA AND HYPERLIPIDEMIA | PEARCE , BRADLEY C. |
| 08233545 | 5434154 | 150 | | ANTIMIGRAINE 4-PYRIMIDINYL AND PYRIDINYL DERIVATIVES OF INDOL- 3YL-ALKYLPIPERAZINES | PEARCE , BRADLEY C. |
| 08015778 | 5348974 | 150 | | TOCOTRIENOLS IN THE TREATMENT OF HYPERCHOLESTEROLEMIA, HYPERLIPIDEMIA AND THROMBOEMBOLIC DISORDERS | PEARCE , BRADLEY C. |
| 07995485 | 5296508 | 150 | 12/23/1992 | FARNESYLATED TETRAHYDRO- NAPHTHALENOLS AS HYPOLIPIDEMIC AGENTS | PEARCE , BRADLEY C. |
| 07749776 | Not Issued | 161 | 08/26/1991 | BENZOPYRAN ANALOGS OF THE TOCOTRIENOLS IN THE TREATMENT OF HYPERCHOLESTEROLEMIA AND HYPERLIPIDEMIA | PEARCE , BRADLEY C. |
| 07959592 | Not Issued | 166 | 10/13/1992 | ANTIMIGRAINE 4-PYRIMIDINYL AND PYRIDINYL DERIVATIES OF INDOL- 3YL-ALKYLPIPERAZINES | PEARCE, BRADLEY C. |
| 07890414 | Not Issued | 161 | 05/29/1992 | ACYCLIC TOCOTRIENOL ANALOGS IN THE TREATMENT OF HYPERCHOLESTEROLEMIA AND HYPERLIPIDEMIA | PEARCE , BRADLEY C. |
| 60069974 | Not Issued | 159 | 12/18/1997 | ANTIMIGRAINE PEPTIDERGIC DERIVATIVES OF INDOLYLALKYL- PYRINYL AND PYRIMIDINYL PIPERAZINES | PEARCE, BRADLEY C. |
| 08104512 | Not Issued | 161 | 08/09/1993 | BENZOPYRAN ANALOGS OF THE TOCOTRIENOLS IN THE TREATMENT OF HYPERCHOLESTEROLEMIA AND HYPERLIPIDEMIA | PEARCE, BRADLEY C. |
| 08048717 | 5391765 | 150 | 04/16/1993 | CHOLESTEROL LOWERING/ANTIOXIDANT NITROXIDES | PEARCE, BRADLEY C. |
| 08048697 | Not Issued | 161 | | ARYL BIOISOSTERES OF THE FARNESYL/SIDE CHAIN OF TOCOTRIENOL | PEARCE , BRADLEY C. |
| 60104909 | Not Issued | 159 | | CORRUGATED MULTILAYER METAL FOIL PANELS AND METHODS OF MAKING | PEARCE, BRADLEY J. |
| 60235804 | Not Issued | 020 | 09/27/2000 | BENZIMIDAZOLONE ANTIVIRAL AGENTS | PEARCE, BRADLEY |

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|----------|---------------|-----|------------|---|--------------------------|
| 60217444 | Not Issued | 020 | 07/10/2000 | COMPOSITION AND ANTIVIRAL ACTIVITY OF SUBSTITUTED INDOLEOXOACETIC PIPERAZINE DERIVATIVES | PEARCE, BRADLEY C. |
| 09952736 | 6506738 | 150 | 09/14/2001 | BENZIMIDAZOLONE ANTIVIRAL AGENTS | PEARCE, BRADLEY C. |
| 60265978 | Not Issued | 020 | 02/02/2001 | COMPOSITION AND ANTIVIRAL ACTIVITY OF SUBSTITUTED INDOLEOXOACETIC PIPERAZINE DERIVATIVES | PEARCE, BRADLEY C. |
| 10027612 | Not Issued | 090 | 12/19/2001 | COMPOSITION AND ANTIVIRAL ACTIVITY OF SUBSTITUTED INDOLEOXOACETIC PIPERAZINE DERIVATIVES | PEARCE, BRADLEY C. |
| 60257139 | Not Issued | 020 | 12/20/2000 | HETEROCYCLIC SUBSTITUTED 2- METHYL-BENZIMIDAZOLE ANTIVIRAL AGENTS | PEARCE, BRADLEY C. |
| 09994012 | Not Issued | 071 | 11/16/2001 | HETEROCYCLIC SUBSTITUTED 2- METHYL-BENZIMIDAZOLE ANTIVIRAL AGENTS | PEARCE, BRADLEY C. |
| 09888686 | Not Issued | 161 | 06/25/2001 | COMPOSITION AND ANTIVIRAL ACTIVITY OF SUBSTITUTED INDOLEOXOACETIC PIPERAZINE DERIVATIVES | PEARCE, BRADLEY C. |

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Your Search was:

Last Name = YIN

First Name = ZHIWEI

| Application# | Patent# | Status | Date Filed | Title | Inventor Name |
|--------------|---------------|--------|------------|--|---------------|
| 60266183 | Not Issued | 020 | 02/02/2001 | COMPOSITION AND ANTIVIRAL ACTIVITY OF SUBSTITUTED AZAINDOLEOXOACETIC PIPERAZINE DERIVATIVES | YIN, ZHIWEI |
| 09888686 | Not Issued | 161 | | COMPOSITION AND ANTIVIRAL ACTIVITY OF SUBSTITUTED INDOLEOXOACETIC PIPERAZINE DERIVATIVES | |
| 60314406 | Not Issued | 020 | 08/23/2001 | COMPOSITION AND ANTIVIRAL ACTIVITY OF SUBSTITUTED AZAINDOLEOXOACETIC PIPERAZINE DERIVATIVES | YIN, ZHIWEI |
| 09994012 | Not Issued | 071 | 11/16/2001 | HETEROCYCLIC SUBSTITUTED 2-METHYL-BENZIMIDAZOLE ANTIVIRAL AGENTS | YIN, ZHIWEI |
| 60383509 | Not Issued | 020 | 05/28/2002 | INDOLE, AZAINDOLE AND RELATED HETEROCYCLIC 4- ALKENYL PIPERIDINE AMIDES | YIN, ZHIWEI |
| 10214982 | Not Issued | 020 | 08/07/2002 | COMPOSITION AND ANTIVIRAL ACTIVITY OF SUBSTITUTED AZAINDOLEOXOACETIC PIPERAZINE DERIVATIVES | YIN, ZHIWEI |
| 60257139 | Not Issued | 020 | 12/20/2000 | HETEROCYCLIC SUBSTITUTED 2-METHYL-BENZIMIDAZOLE ANTIVIRAL AGENTS | YIN, ZHIWEI |
| 10038306 | Not Issued | 030 | | COMPOSITION AND ANTIVIRAL ACTIVITY OF SUBSTITUTED AZAINDOLEOXOACETIC PIPERAZINE DERIVATIVES | |
| 10027612 | Not Issued | 090 | 12/19/2001 | COMPOSITION AND ANTIVIRAL ACTIVITY OF SUBSTITUTED INDOLEOXOACETIC PIPERAZINE DERIVATIVES | YIN, ZHIWEI |
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| 10052147 | Not Issued | 030 | METHOD AND APPARATUS FOR DETECTING PROSODIC PHRASE BREAK IN A TEXT TO SPEECH (TTS) SYSTEM | YING, ZHIWEI |
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| 10316708 | Not Issued | 020 | SIGNED INTEGER LONG DIVISION APPARATUS AND METHODS FOR USE WITH PROCESSORS | YING, ZHIWEI |

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Your Search was:

Last Name = THURING

First Name = JAN

| Application# | Patent# | Status | Date Filed | Title | Inventor Name |
|--------------|---------------|--------|------------|---|------------------------|
| 09994012 | Not Issued | 071 | | IIII I DICO CI CILICO | THURING, JAN WILLEM |
| 60339025 | Not Issued | 020 | | 100001110122 = | THURING, JAN WILLEM |
| 10309505 | Not Issued | 019 | | SUBSTITUTED 2-METHYL- BENZIMIDAZOLE RESPIRATORY SYNCYTIAL VIRUS ANTIVIRAL AGENTS | THURING, JAN WILLEM |

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Your Search was:

Last Name = YU

First Name = KUO-LONG

| Application# | Patent# | Status | Date Filed | Title | Invei Nam |
|--------------|---------------|--------|------------|--|--------------------|
| 09354958 | Not Issued | 161 | 07/16/1999 | SUBSTITUTED BENZIMIDAZOLE ANTIVIRAL AGENTS | YU , KUO LON |
| 07650531 | Not Issued | 161 | 02/05/1991 | USE OF CHIRAL 2- (PHOSPHONOMETHOXY)PROPYL GUANINES AS ANTIVIRAL AGENTS | YU, KUC LON |
| 08306092 | Not Issued | 164 | 09/19/1994 | RETINOID-LIKE COMPOUNDS | YU , KUC LON |
| 07865570 | Not Issued | 166 | 04/09/1992 | CHIRAL 2-(PHOSPHONOMETHOXY) PROPYL GUANINES AS ANTIVIRAL AGENTS | YU, KUC LON |
| 60093387 | Not Issued | 159 | 07/20/1998 | SUBSTITUTED BENZIMIDAZOLE ANTIVIRAL AGENTS | YU, KUC LON |
| 08350851 | 5696263 | 150 | 12/06/1994 | ANTIVIRAL ACYCLIC PHOSPHONOMETHOXYALKYLSUBSTITUTED ALKENYL AND ALKYNYL PURINE AND PYRIMIDINE DERIVATIVES | YU, KUC LON |
| 07511690 | Not Issued | 161 | 04/20/1990 | CHIRAL 2-(PHOSPHONOMETHOXY) PROPYL GUANINES AS ANTIVIRAL AGENTS | YU , KUC LON |
| 08216740 | Not Issued | 161 | 03/23/1994 | RETINOID-LIKE COMPOUNDS | YU , KU(LON |
| 08643143 | Not Issued | 161 | 05/02/1996 | RETINOID-LIKE COMPOUNDS | YU KU(LON |
| 08464186 | 5648385 | 150 | 06/05/1995 | RETINOID-LIKE COMPOUNDS | YU KU(LON |
| 08028733 | Not | 166 | 03/08/1993 | CHIRAL 2-(PHOSPHONOMETHOXY) | YU |

| | Issued | | | PROPYL GUANINES AS ANTIVIRAL AGENTS | KUO LON |
|----------|---------------|-----|------------|---|--------------------|
| 07801338 | Not Issued | 161 | 12/02/1991 | USE OF CHIRAL 2- (PHOSPHONOMETHOXY)PROPYL GUANINES AS ANTIVIRAL AGENTS | YU , KUO LON |
| 07777835 | Not Issued | 166 | | ANTIVIRAL ACYCLIC PHOSPHONOMETHOXYALXYLSUBSTITUTED ALKENYL AND ALKYNYL PURINE AND PYRIMIDINE DERIVATIVES | LON |
| 08643142 | 5618839 | 150 | 05/02/1996 | RETINOID-LIKE COMPOUNDS | YU, KUO LON |
| 07513307 | Not Issued | 168 | 04/20/1990 | USE OF CHIRAL 2- (PHOSPHONOMETHOXY)PROPYL GUANINES AS ANTIVIRAL AGENTS | YU, KUO LON |
| 07711247 | Not Issued | 161 | 06/06/1991 | CHIRAL 2-(PHOSPHONOMETHOXY) PROPYL GUANINES AS ANTIVIRAL AGENTS | YU, KUC LON |
| 07918507 | 5302585 | 150 | 07/22/1992 | USE OF CHIRAL 2- (PHOSPHONOVETHOXY)PROPYL GUANINES AS ANTIVIRAL AGENTS | YU, KUC LON |
| 60263363 | Not Issued | 020 | 01/22/2001 | IMIDAZOPYRIDINE AND IMIDAZOPYRIMIDINE ANTIVIRAL AGENTS | YU, KUC LON |
| 09840279 | 6489338 | 150 | 04/23/2001 | IMIDAZOPYRIDINE AND IMIDAZOPYRIMIDINE ANTIVIRAL AGENTS | YU, KUC LON |
| 60211447 | Not Issued | 020 | 06/13/2000 | IMIDAZOPYRIDINE AND IMIDAZOPYRIMIDINE ANTIVIRAL AGENTS | YU, KUC LON |
| 60235804 | Not Issued | 020 | 09/27/2000 | BENZIMIDAZOLONE ANTIVIRAL AGENTS | YU, KU(LON |
| 09952736 | 6506738 | 150 | 09/14/2001 | BENZIMIDAZOLONE ANTIVIRAL AGENTS | YU, KU(LON |
| 60327644 | Not Issued | 020 | 10/08/2001 | TRICYCLIC COMPOUNDS USEFUL FOR MODULATING LXR | YU, KU(LON |
| 09994012 | Not Issued | 071 | 11/16/2001 | HETEROCYCLIC SUBSTITUTED 2- METHYL-BENZIMIDAZOLE ANTIVIRAL AGENTS | YU, KU(LO) |
| 60257139 | Not Issued | 020 | 12/20/2000 | HETEROCYCLIC SUBSTITUTED 2- METHYL-BENZIMIDAZOLE ANTIVIRAL AGENTS | YU, KU(LON |

| 60339025 | Not Issued | 020 | | SUBSTITUTED 2-METHYL- BENZIMIDAZOLE RESPIRATORY SYNCYTIAL VIRUS ANTIVIRAL AGENTS | YU, KUO LON |
|----------|---------------|-----|------------|---|-------------------|
| 10309505 | Not Issued | 019 | | SUBSTITUTED 2-METHYL- BENZIMIDAZOLE RESPIRATORY SYNCYTIAL VIRUS ANTIVIRAL AGENTS | YU, KUO LON |
| 10289829 | Not Issued | 020 | 11/07/2002 | SUBSTITUTED BENZIMIDAZOLE ANTIVIRAL AGENTS | YU, KUO LON |

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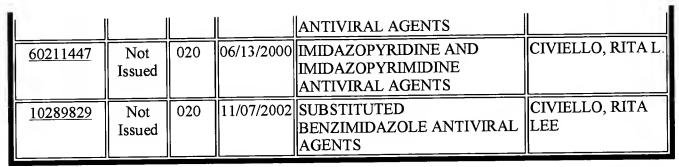
Inventor Name Search Result

Your Search was:

Last Name = CIVIELLO

First Name = RITA

| Application# | Patent# | Status | Date Filed | Title | Inventor Name |
|--------------|---------------|--------|------------|---|------------------------|
| 09354958 | Not Issued | | | SUBSTITUTED | CIVIELLO , RITA LEE |
| 60093387 | Not Issued | 159 | 07/20/1998 | SUBSTITUTED BENZIMIDAZOLE ANTIVIRAL AGENTS | CIVIELLO , RITA LEE |
| 60235804 | Not Issued | 020 | 09/27/2000 | BENZIMIDAZOLONE ANTIVIRAL AGENTS | CIVIELLO, RITA |
| 09952736 | 6506738 | 150 | 09/14/2001 | BENZIMIDAZOLONE ANTIVIRAL AGENTS | CIVIELLO, RITA |
| 60413534 | Not Issued | 020 | 09/25/2002 | ANTI-MIGRAINE UREIDOAMIDES | CIVIELLO, RITA |
| 60263363 | Not Issued | 020 | 01/22/2001 | IMIDAZOPYRIDINE AND IMIDAZOPYRIMIDINE ANTIVIRAL AGENTS | CIVIELLO, RITA L. |
| 09994012 | Not Issued | 071 | 11/16/2001 | HETEROCYCLIC SUBSTITUTED 2-METHYL- BENZIMIDAZOLE ANTIVIRAL AGENTS | CIVIELLO, RITA L. |
| 10309505 | Not Issued | 019 | 12/04/2002 | SUBSTITUTED 2-METHYL- BENZIMIDAZOLE RESPIRATORY SYNCYTIAL VIRUS ANTIVIRAL AGENTS | CIVIELLO, RITA L. |
| 60339025 | Not Issued | 020 | 12/10/2001 | SUBSTITUTED 2-METHYL- BENZIMIDAZOLE RESPIRATORY SYNCYTIAL VIRUS ANTIVIRAL AGENTS | CIVIELLO, RITA L |
| 60257139 | Not Issued | 020 | 12/20/2000 | HETEROCYCLIC SUBSTITUTED 2-METHYL- BENZIMIDAZOLE ANTIVIRAL AGENTS | CIVIELLO, RITA L. |
| 09840279 | 6489338 | 150 | 04/23/2001 | IMIDAZOPYRIDINE AND IMIDAZOPYRIMIDINE | CIVIELLO, RITA L. |



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Inventor Name Search Result

Your Search was:

Last Name = COMBRINK

First Name = KEITH

| First Name - RETTT | | | | | |
|--------------------|---------------|--------|------------|---|------------------------|
| Application# | Patent# | Status | Date Filed | Title | Inventor Name |
| 07959592 | Not Issued | | | ANTIMIGRAINE 4- PYRIMIDINYL AND PYRIDINYL DERIVATIES OF INDOL-3YL- ALKYLPIPERAZINES | COMBRINK , KEITH D. |
| 08233545 | 5434154 | 150 | 04/26/1994 | ANTIMIGRAINE 4- PYRIMIDINYL AND PYRIDINYL DERIVATIVES OF INDOL-3YL- ALKYLPIPERAZINES | COMBRINK , KEITH D. |
| 60235804 | Not Issued | 020 | 09/27/2000 | BENZIMIDAZOLONE ANTIVIRAL AGENTS | COMBRINK, KEITH |
| 09952736 | 6506738 | 150 | 09/14/2001 | BENZIMIDAZOLONE ANTIVIRAL AGENTS | COMBRINK, KEITH |
| 60339025 | Not Issued | 020 | 12/10/2001 | SUBSTITUTED 2-METHYL- BENZIMIDAZOLE RESPIRATORY SYNCYTIAL VIRUS ANTIVIRAL AGENTS | COMBRINK, KEITH |
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| 09840279 | 6489338 | 150 | INTERNATION OF THE PROPERTY OF | COMBRINK, KEITH D. |
|----------|---------------|-----|--|-----------------------|
| 60211447 | Not Issued | 020 | EVIID I E E | COMBRINK, KEITH D. |

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